Innovations by the Faculty in Teaching and Learning

Understanding the instructional models that capture, define, and convey knowledge from faculty members to learners can increase teaching effectiveness. These entail a thorough comprehension of the topic content, planning, classroom instructional tactics, evaluating the students' understanding, and analysing the learning outcomes.

The Department of Mechanical Engineering practices innovative, traditional teaching and learning strategies that include publishing instructional videos and expert lectures in the college website. Critic reviews are taken from stake holders for continuous improvement.

For peer reviews, the faculty's initiatives to adopt novel teaching and learning techniques are amply documented in our files and on the institute website. The implementation of teaching learning practices is shown below.

The innovative teaching learning strategies provide opportunities for students to work in teams, learn from peers, and learn from themselves. Also the students have the opportunities to en gage in sophisticated and complex levels of cognitive activity – define, analyse, evaluate, reflect, access, and solve real-world problems. The evaluation suggests that implementation of these methodologies in the engineering courses improve the higher-level skills of the students as well as integrated theory, design and practice.

Innovative Teaching Methodologies

To improve the quality of teaching learning and to make the students actively participate in the class environment, the following are the few of the appropriate innovations followed by the faculty in our department. However, our methods are subject to improvement. Some of our cutting-edge techniques are:

- Innovative assignments and real-time problems
- Flipped classroom
- Technical presentation
- Value added courses
- On-site learning
- Inquiry-based learning
- Ask open-ended questions

- Peer learning
- Quiz
- Learning from experts
- Videos demonstration
- Developing digital content materials

Head of the Department

Innovations by the Faculty in Teaching and Learning:

S. No.	Name of the Faculty	Name of the course	Year & Semester	Topic	Innovative methods	Website
2021-22						
1.	Mr. Veeranjaneyulu Itha	Entrepreneur Resource Planning	IV & II	ERP Implementation	Flipped Classroom	https://www.aec.edu.in/?p=MECH#tab16

Head of the Department

Flipped Classroom:

A flipped classroom is an instructional strategy focussed on student engagement and active learning, giving the instructor a better opportunity to deal with mixed levels, student difficulties, and differentiated learning preferences during the in-class time. A student discovers the ideas of videos, may use them for discussions and assignments in the classroom to motivate the students to learn the concepts thoroughly.

One of the most central benefits to adopting flipped learning methods is that students are able to learn more deeply and retain material better. Because they have more ownership over the learning process and receive more frequent feedback, students are able to gain a more complete understanding of content.

Objective of Flipped Classroom:

- More participation of Students
- Versatility for students to learn in time and speed.
- Interaction instructor-student.
- Appropriate use of resources by the teacher for constructive learning methods.
- Inspire students to learn the concepts thoroughly.

Plan of Execution:

- Orientation session: 20 minutes

  Students are provided with the learning material (Video link, text book etc.) of the topic to be covered and a time of 4 days to prepare for the activity.
- On the day of activity, the topics are given as per their position in the classroom (the students are observed writing different topics at the same desk and 20 minutes are given to think and write about the topic.
- The scripts are collected in the chronological order (roll no.)
- Students learn the ideas of videos, and can utilize them in the class for discussions and assignments. It encourages the students to fully understand the topics thoroughly.
- On the day of activity, the topics are given as per their position in the classroom (the students are observed writing different topics at the same desk and 20 minutes are given to think and write about the topic.
- The scripts are collected in the chronological order (roll no.)

- Students learn the ideas of videos, and can utilize them in the class for discussions and assignments. It encourages the students to fully understand the topics thoroughly.

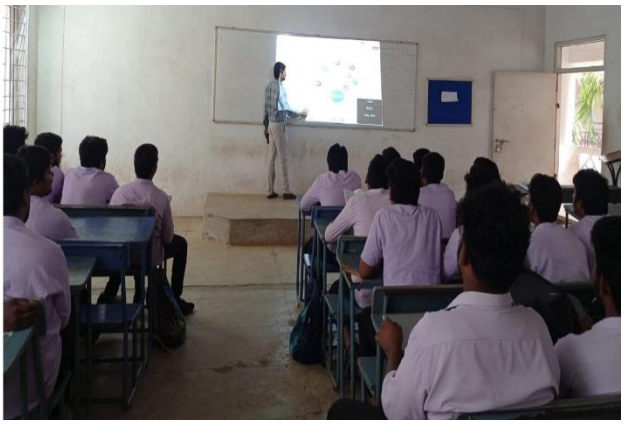
Benefits over Conventional Teaching Methods

Hence, using this innovate teaching method of a Flipped Classroom, our faculty could observe the following benefits over the conventional teaching methods:

- Teachers spend less time introducing new topics.
- Students develop independent learning skills.
- Teachers can create more engaging lessons.
- Students who are absent do not fall behind.
- Teachers can re-use the content they create.
- Students are able to build a deeper understanding.

Mapping of Innovative T-L Method to Subject

Name of the Faculty	Name of the course	Year & Semester	Topic	Innovative methods
Mr. Veeranjaneyulu Itha	Entrepreneur Resource Planning	IV & II	ERP Implementation	Flipped Classroom



Students are actively participated in the Flipped classroom activity