DEPARTMENT OF COMPUTER ENGINEERING

Initiatives in teaching and learning process followed by the department

GOALS:

In order to improve students' teaching experience aside from traditional classroom teaching, the department uses novel concepts and their subsequent execution by means of quantifiable programs with the following goals:

The department will continuously strive to:

- Enrich student learning by innovative practices.
- Develop students' comprehension and expertise of creative methods and strategies.
- Broaden students' perspective of emerging technologies and tools in academics, and contemporary and social issues by innovative strategies.
- Motivate students to innovatively think, formulate and perform through different club activities.

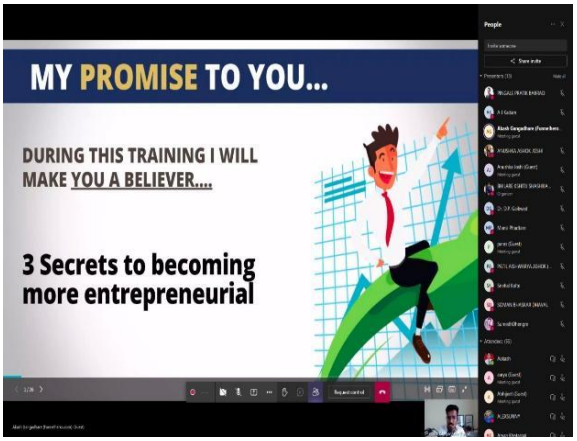
List of initiatives in teaching and learning process followed by the department:

Given below is a listing of some of the noticeable initiatives taken by the faculty of the department. However, it should not be considered as a conclusive list; but as a part of an open ended process of continuous improvement.

1. **Student Chapter/Club Activities**: The depertment has following professional chapters which provides a good platform for the students to take active part in the various competions, seminars and levctures arranged by the society. The activities help the students to showcase their talents in terms for team buiding, communications skills, team work, target work and overall development in

professional activities. One faculty advisor is associated with each student chapter for mentoring, guidance and overall governance.

i. Codigo Madrid Student Club
ii. IEI Student Chapter
iii. IUCEE Student Chapter
iv. Google DSC India Club



Student Chapter Activities: Webinar and Expert lectures conducted on Advanced technologies

List of Student Chapters

Sr.No	Student Chapter	Faculty Advisor
1.	Codigo-Madrid Club	Dr. D.P.Gaikwad
2.	IEI Student Chapter	A.A.Gupta
3.	IUCEE student Chapter	M. M.Swami
4.	DSC Club	Dr. D.P.Gaikwad

Outcome: Enrich students learning skills like communication, presentation, leadership etc**.**

2. **Virtual labs:** In certain labs like the Digital Electronics 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.

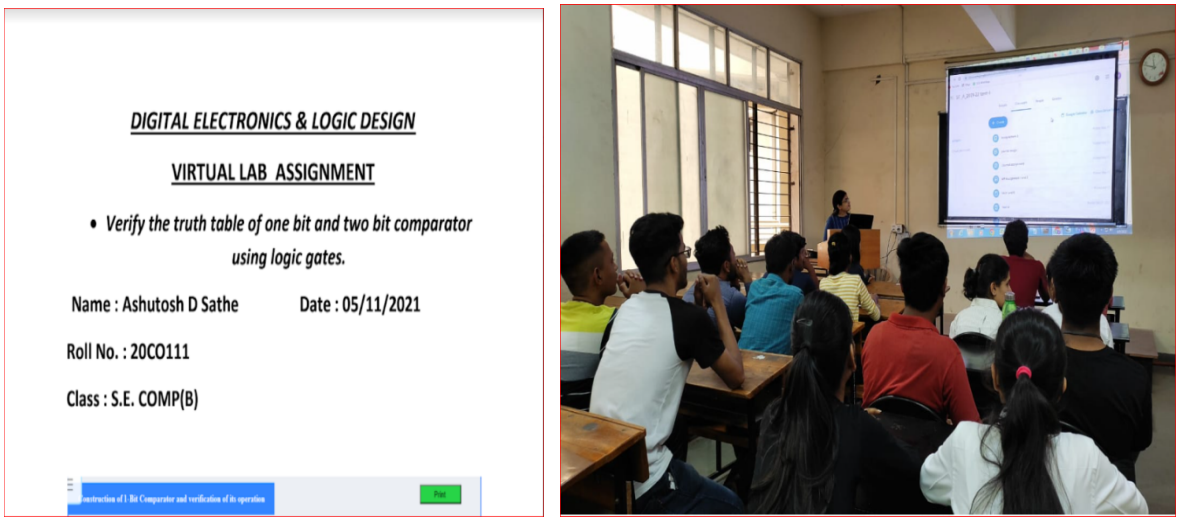


Fig: Virtual Lab used to explain assignments to students

Outcome: Improve students' understanding and learning

3. **Mini Projects and working models**: In many relevant subjects, faculty encourage the students to make miniature working models of mechanisms and machine components. The faculty members also make use of cut sections as well as working models to enhance interest and level of learning.

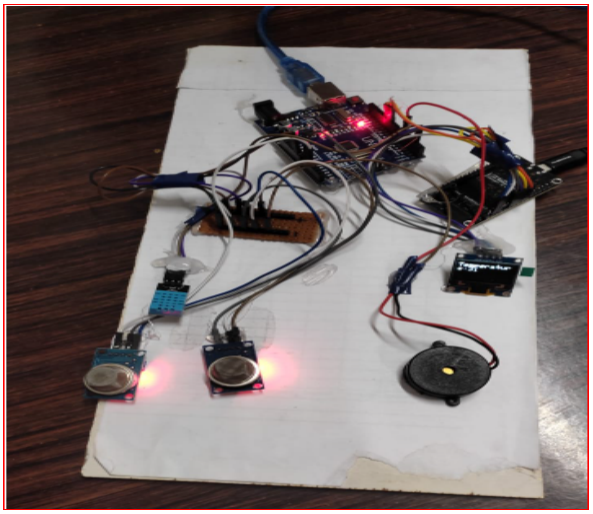
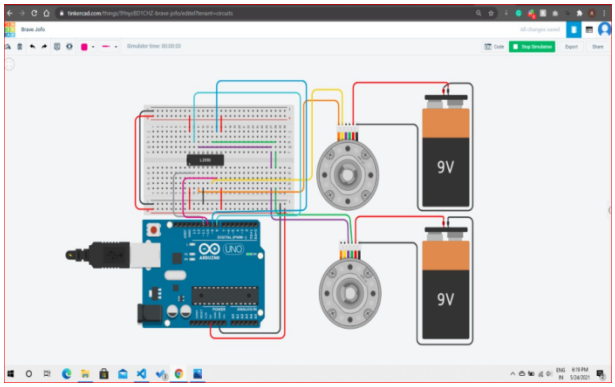
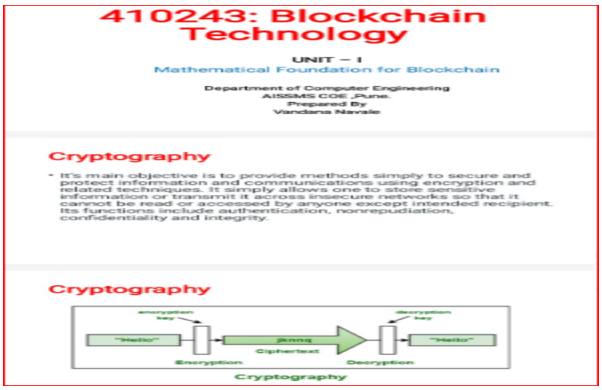


Fig: Working model

Outcome: Subject knowledge enhancement

4. **Use of Animations/ Miniprojects/PPTs/CASE studies/notes:** The department has simulation for IOT miniprojects and digial electronics. Department also has licence softwares for developing application softwares . Some faculty members develop applications as well as mini projects with the help of students. All the classrooms are well-equipped with high quality projectors ready for use any time.





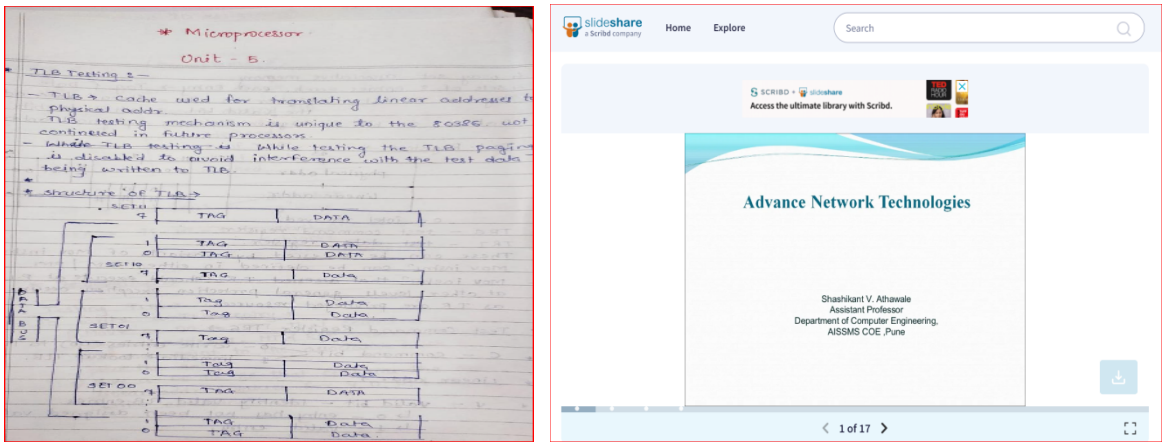


Fig: Simulators and PPTs used by faculties

Outcome: Improve students' understanding and learning

5. **E content on Google Classroom:** Faculty have also created their own Google classrooms wherein they upload study material relevant to their own subjects. The links are shared with the students and the contents are openly accessed by all students.

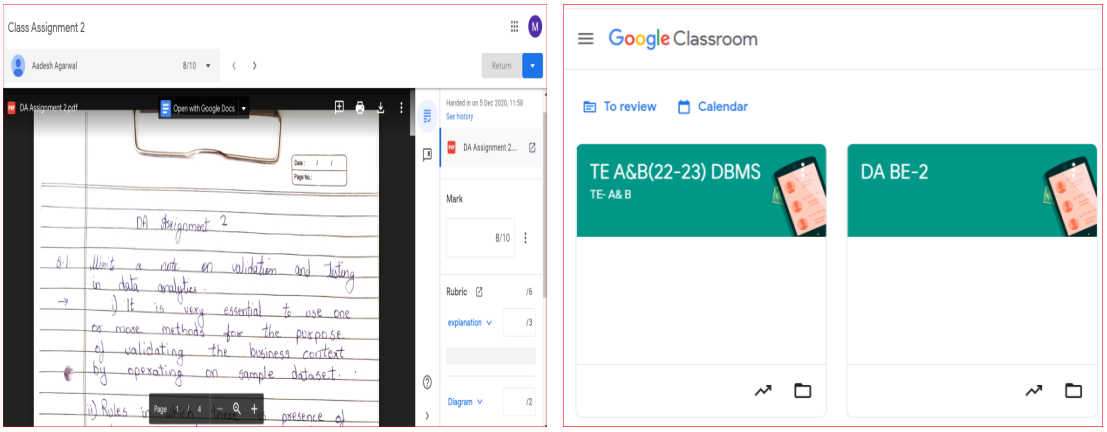


Fig: Assignments and Study material uploaded on Google Classroom

Outcome: Improve students' understanding and learning

6. **Econtent on Youtube Channel:** Some Faculty members have also created their own YouTube channels where they post study materials for their specific subjects. The links are distributed to the students, and the content is available to all.

https://www.youtube.com/playlist?list=PLUNDTAJyONnxnYFJ08my_FDgKhDL19tQR

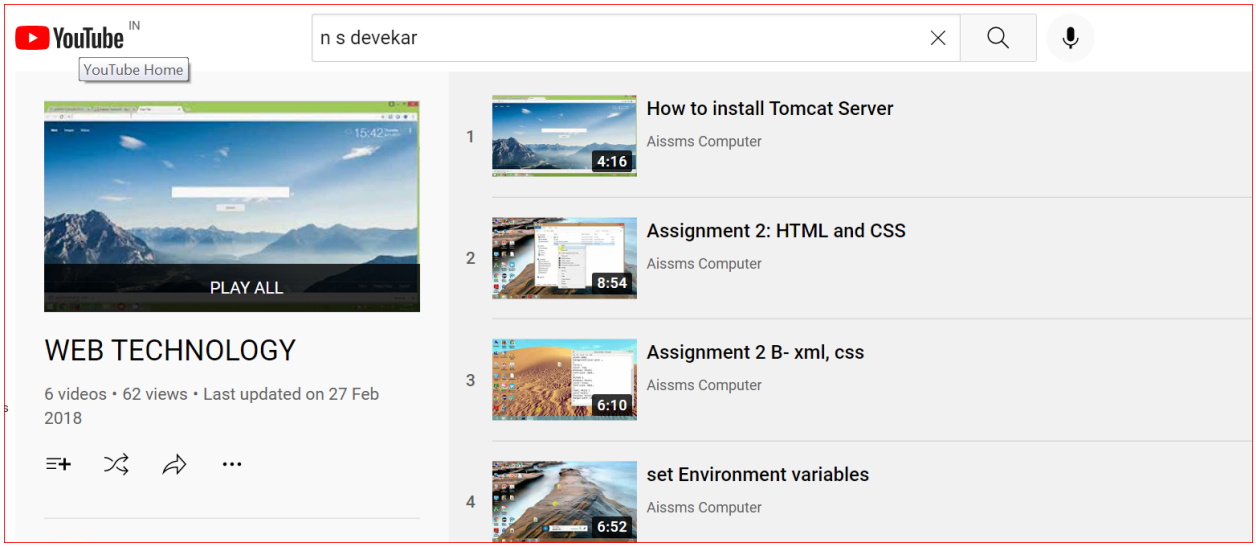
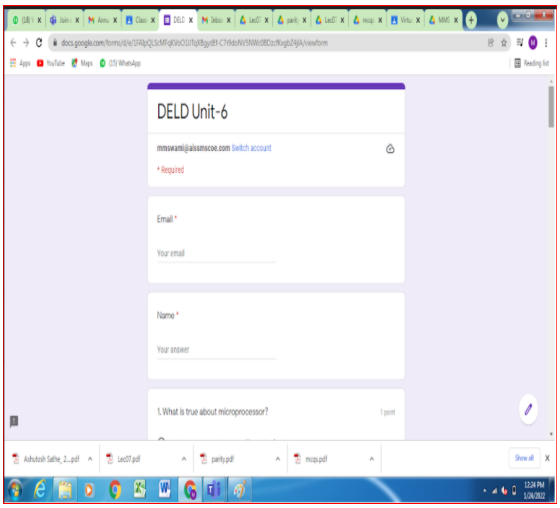
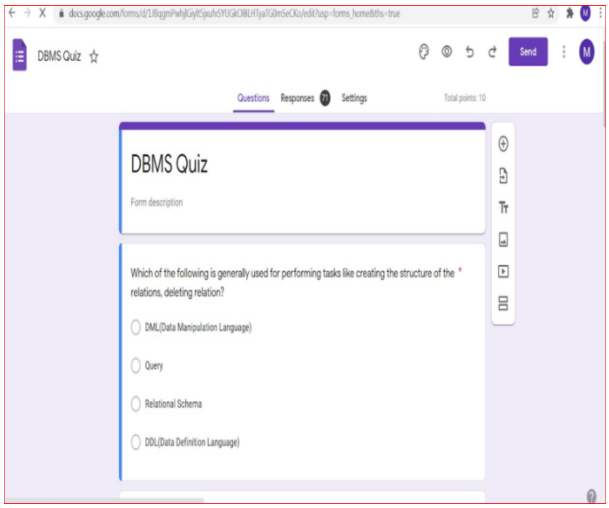


Fig: Youtube channel of faculty

Outcome: It contributes to students' knowledge and opportunity for self-study.

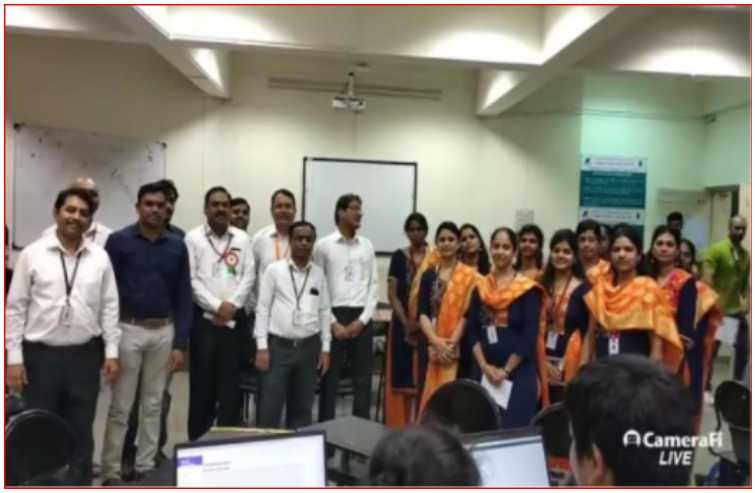
7. **Classroom quiz sessions:** These help in creating interest by breaking monotony of regular classes while enhancing the learning experience.



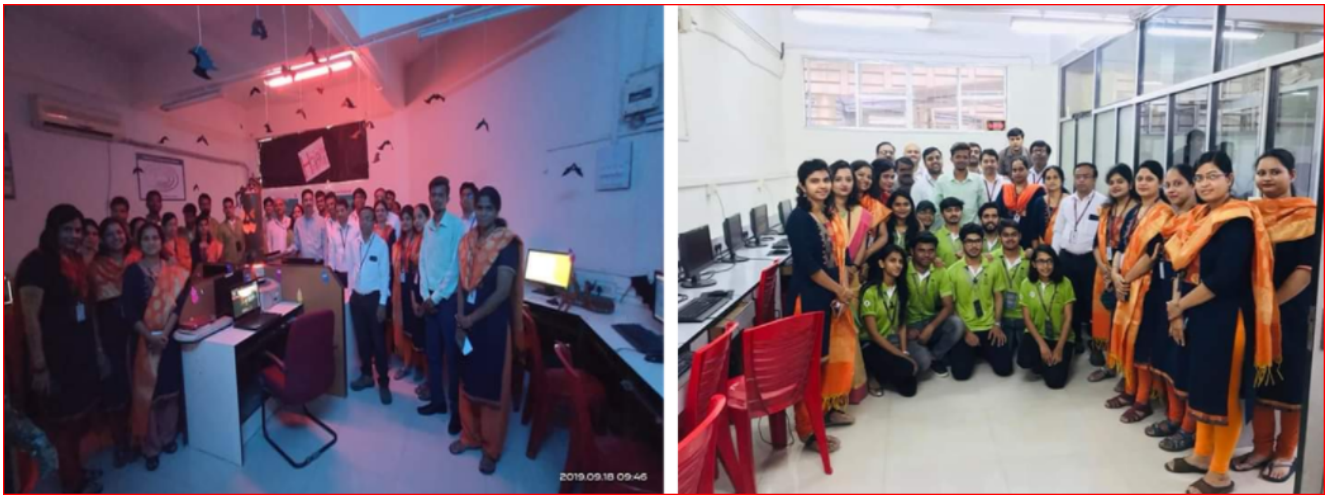


Outcome: Subject knowledge enhancement

8. **Students Symposium:** The department conducts Engineering **Today (BITS N BYTES),** an annual national level student symposium, in the month of September every year to encourage the students organizing and participating in various events to enhance their skills. The institute also conducts **science exhibition** where the testing facilities and projects are exhibited to SE and TE students as well as students invited from nearby schools.



“Mini Hackathon”,



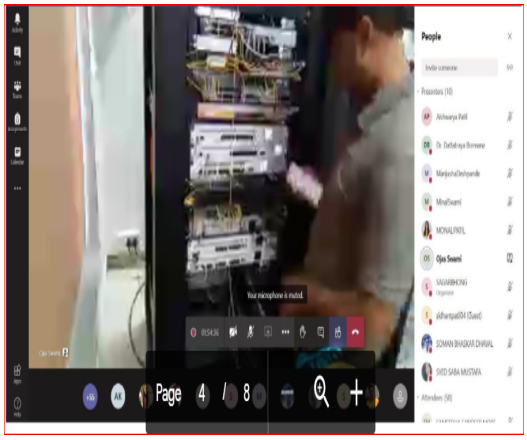
Engineering Today (Bits n Bytes)

Outcome: Improving skills so that they can participate in more events.

9. Industry Visits:

Students are exposed to latest developments through regular visits to industry and

exhibitions.



Industrial Visits(field visit & Virtual visit)

Outcome: It contributes to students' knowledge and opportunity for self-study

10. Project Based Learning:

PBL has been introduced for SE students with the goal of motivating students to learn by working cooperatively in groups to solve a social problem. PBL is a student-centered pedagogy that employs a dynamic classroom approach in which students are believed to gain a deeper understanding through active exploration of real-world challenges and problems. Students gain knowledge about a subject by investigating and responding to a complex question, challenge, or problem over time. It is an inquiry-based and active learning style. Faculties are assigned as mentor to each project group. The role of faculty is to motivate students to exploration of real-world challenges and problems, provide the guidance related to project development

Outcome: Students can complete projects and develop expertise of creative methods.

11. **Cutting-edge initiative:** Today's education system is rapidly evolving in order to introduce new teaching techniques and strategies that promote a culture of diversity and inclusion. Similarly, each teacher has a distinct teaching style. However, all teachers have the same goal: to instil a love of learning in their students. Department have a few Cutting- edge initiatives as given below that use modern technology

- Avishkar
- Hackathon
- Unnat Bharat Abhiyan