



JSS MAHAVIDYAPEETHA

JSS ACADEMY OF TECHNICAL EDUCATION, BENGALURU

Affiliated to Visvesvaraya Technological University, Belagavi, Karnataka, INDIA

Approved by All India Council for Technical Education, New Delhi

UG programs accredited by NBA: ECE, CSE, ISE, CIVIL, E & IE and MECHANICAL

Department of Mechanical Engineering

Innovative teaching methods

Clear goals and adequate preparation:

The goals of innovative practices in the teaching-learning process are to make the students get insight knowledge in the course and acquire skill sets and in turn score good grades in semester end examinations.

To achieve this faculty members are consistently taking the following measures:

- Attending Faculty Development Programme
- Pursuing online courses
- Self-equipping through Institute – Industry Interaction
- Delivering lectures in Value Added Courses

For year 2022-23 along with the above the following measures are also included:

- Undergoing industrial training
- Undergoing Advanced Training Programme

This enables the faculty members to get adequate preparation with subject knowledge to achieve the goal in the teaching-learning process.

To create interest among students and to make the subject comfortable for them to learn, various innovative practices were adopted in the teaching-learning process.

The list of innovative practices followed in teaching-learning processes is listed below:

S. No.	Innovations by the Faculty in Teaching and Learning
1.	Learn Any Time Any Where - Learning with technology
2.	Virtual Leaching Learning Management (Google classroom)
3.	Active Learning Strategy (Flip Classroom)
4.	Teaching through Collaboration (Group discussions, Group Projects)
5.	Learning through Industrial Visit
6.	Learning with MOOCs
7.	Alumni Interaction
8.	Technical Talk by Industry Experts
9.	Projects
10.	Competitions
11.	Paper publication
12.	Techno cultural fest

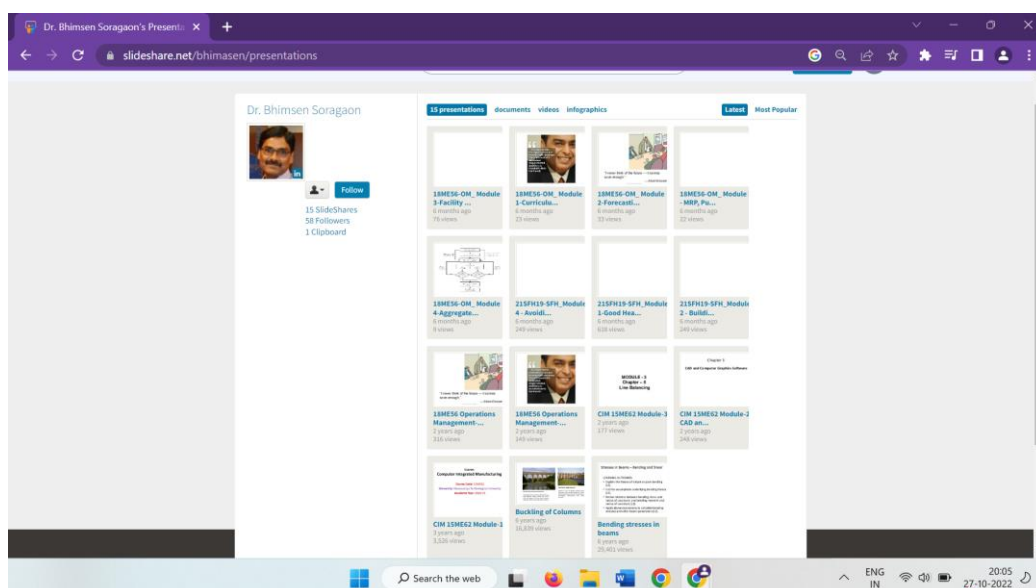
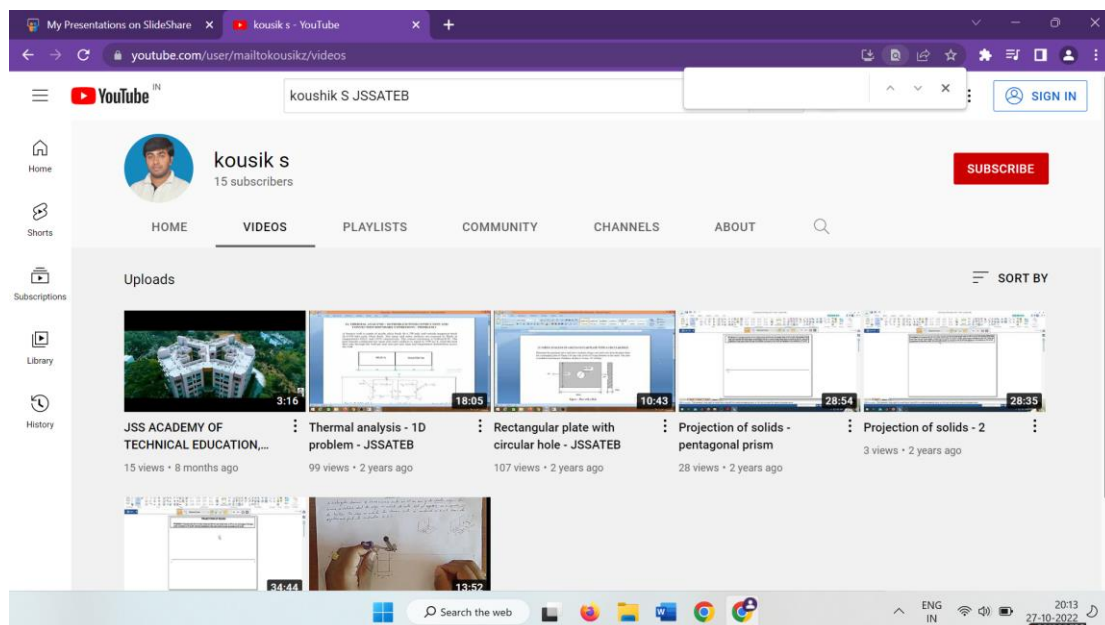
1. Learn Any Time Any Where - Learning with technology

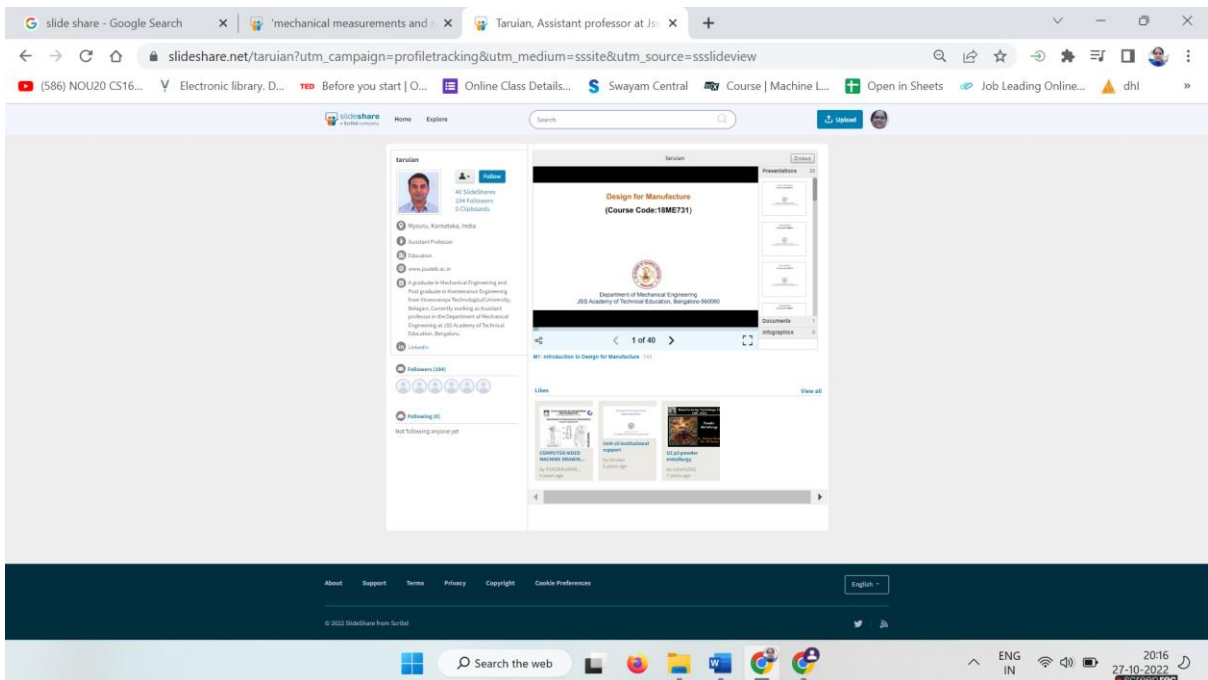
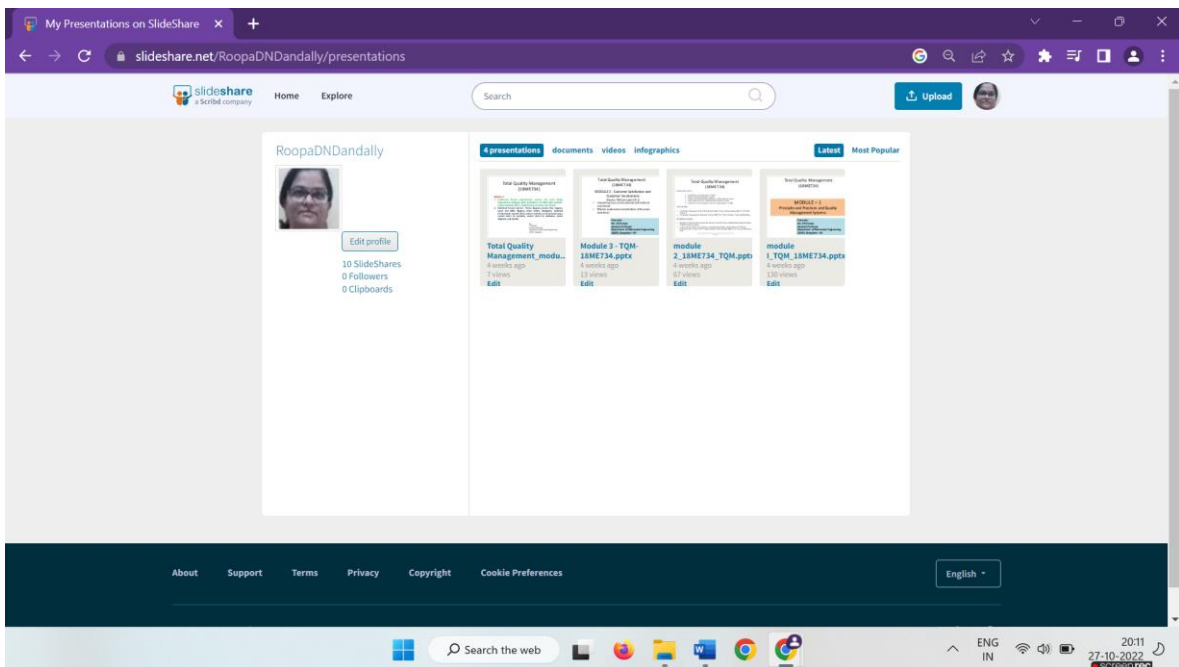
Type of Innovation in Teaching & Learning Method: You Tube, Scribd (Slide Share)

Objective: These teaching tools for teachers all around the world and are adding to their arsenal. These channels make it easier and more convenient for teachers to pass knowledge to students in ways that were never possible in the past. With video lectures and content sharing it encourages a level of familiarity that helps with building a community and knowledge that is always available and accessible, irrespective of teacher's and student's location

Significance Results Observed: The students were able to access lectures and content at any place and at any time. Also, they would explore and learn from more lectures available for all the new technologies/concepts.

Faculty: S Koushik, Bhimasen Soragaon, K S Mahesh, D N Roopa





2. Virtual Teaching Learning Management

Type of Innovation in Teaching & Learning Method: Google Classroom

Objective: Bringing technology into the classroom allows educators to experiment with innovative methods of teaching. The use of google classroom is one such method where teachers can save vital classroom resources such as lesson plans, notes, audio lessons, videos, and assignments details. This can then be accessed by the students from the comfort of their homes, whenever needed bringing the classroom back to the students with the click on a mouse.

Significance Results Observed: Creating a google classroom using google app. Students are made to join as members of the google class room. Notes materials, Assignments, Quiz questions are posted in the app. Students can participate in the quiz by registering through app sign in and evaluation will be done. Students got better understanding of concepts and as well as got knowledge of how to use online tools for the subject. It also ensures that students who have missed class either for illness or any other reason stay updated at all times. It eliminates the need for lugging around heavy textbooks and allows students to learn at a time, place and pace that they are comfortable with.

Faculty: All faculty of the department

The screenshot shows a Google Classroom interface for a class titled "DESIGN THINKING CLASS" under the category "2ND SEMESTER MECHANICAL ENGINEERING (BATCH 2021-22)". The interface includes a navigation bar with "Stream", "Classwork", "People", and "Grades". The main content area features a "Meet" button with a "Generate link" option, a "Class code" of "ls4qr7v", and an "Upcoming" section showing "No work due soon". A central announcement from "Roopa D N" states: "Roopa D N posted a new assignment: Group activity planned to attain the CO... Report/GD/Seminar". The assignment details include: "Posted Aug 22", "Dear students:", "1. Make your groups as per the topic given. Eg. All students allocated Braun will be one group.", "2. Prepare a report and attach in GC", and "Example: report is attached in your GC". It also shows a progress bar with "22" turned in and "38" assigned. Two PDF attachments are visible: "Assignment for 20 marks.... PDF" and "Sample report on DT.pdf PDF". At the bottom, there is a text input field for "Add class comment...". The browser's address bar shows the URL "classroom.google.com/u/1/c/NDk2MzU2MDMyNDZ" and the Windows taskbar at the bottom displays the date "27-10-2022" and time "20:40".

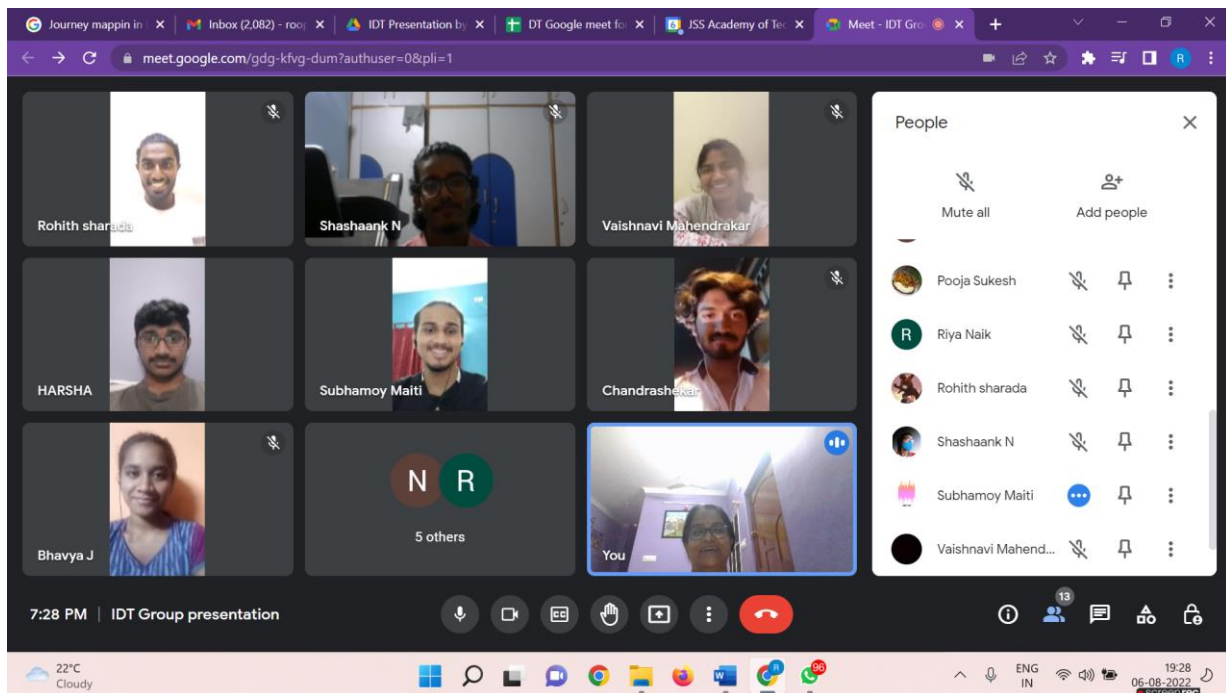
3. Active Learning Strategy

Type of Innovation in Teaching & Learning Method: Flip Class

Objective: It involves encouraging student for presentation of different concepts from the syllabus as a part of revision. Flipping the classroom is an effective teaching method. In this technique, the students are made active participants of the learning process by passing the onus of learning on them, it requires the teachers to relegate to the role of resource providers and the students take the responsibility of gathering concepts information. Using various tools of technology the students are encouraged to constructing knowledge, fill in the information gaps and make inferences on their own as and when needed.

Significance Results Observed: Teaching using this technique, responsibility is on the students and faculty play the role of guides, mentors, supervisors for the students. It also teaches students empathy, negotiation skills, teamwork, and problem -solving.

Faculty: All faculty of the department



4. Collaborative Learning

Type of Innovation in Teaching & Learning Method: Learning through Collaboration

Objective: It involves encouraging student collaboration for various projects. We live in a globalized world and collaboration is an essential life skill that is important for all careers and enterprises. Teachers can help foster this skill in the classroom by allowing students to learn, study and work in groups.

Significance Results Observed: Gives students ownership over the learning process

- Increases student motivation to learn
- Allows students to develop useful skills in self- and peer-assessment

Faculty: All faculty of the department

classroom.google.com/w/NDk2MzU2MDMyNDZl/all

Sample report on DT.pdf

Open with Google Docs

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Department: Mechanical Engineering + Robotics and Automation, 2nd Semester
 Academic Term: Jun 2022-Sept 22

Sub: **Report on application of Design thinking at NETFLIX and Panasonic**

Team Members:

1. USN: 1JS21xx0xx
- 2.
- 3.
- 4.

Name: xyz

Rubrics for evaluation:

Dimension	Characteristics	RUBRIC FOR ACTIVITY (10 MARKS)				Student Score
		Expectations	1	2	Evidence	
Originality (5 M)	Does not collect any information relating to the topic	Collects very varied information, some limited to the topic	Collects much information, but are limited relate to the topic	Collects some basic information, most refer to the topic	Collects a great deal of information all refer to the topic	
Contribution to team (5 M)	Does not perform any duties assigned to the team (10)	Performs very few duties but satisfactorily	Performs many few duties	Performs nearly all duties	Performs all duties of the assigned team (10)	
Works work equitably (5 M)	Always relies on other to do the work	Rarely does the assigned work apart from reminding	Usually does the assigned work apart from reminding	Normally does the assigned work	Always does the assigned work without having to be reminded	
Listen to other team members (5 M)	Is always talking, never allows anyone else to speak	Usually does most of the talking, rarely allows others to speak	Talks about but never shows interest in listening others	Listens, but sometimes talks too much	Listens and speaks for amount	

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24°C Cloudy

ENG IN 09:14 27-09-2022

5. Industrial visit

Type of Innovation in Teaching & Learning Method: Learning through Industrial Visit

Objective: In order to overcome the gap between the theoretical knowledge and Practical knowledge, this teaching technique is very helpful. Students can understand how to implement their knowledge practically.

Significance Results Observed: The students were very involved and learned how the industry works, what practices are followed there and how to prepare for working in an Industry.

Numbers: One visit per semester



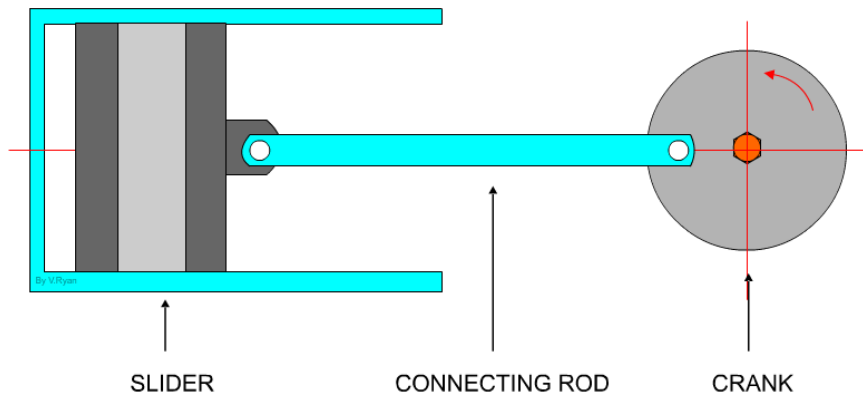
6. Simulations and Do It Yourself

Type of Innovation in Teaching & Learning Method: Simulation and DIY

Objective: Mechanisms are explained through simulation and by helping students to make mechanisms through DIY

Significance Results Observed: Active participation of students. Remembering the topic for a longer time.

Faculty: Dr. K B Yogesh, S Koushik



6. Demonstration

Type of Innovation in Teaching & Learning Method: Demonstration of working models

Objective: To make it easy for students to grasp the working of an engine

Significance Results Observed: It helps to understand construction of engines and students are able to identify which part of system is used for which purpose.

Faculty: Faculty who teach Elements of Mechanical Engineering

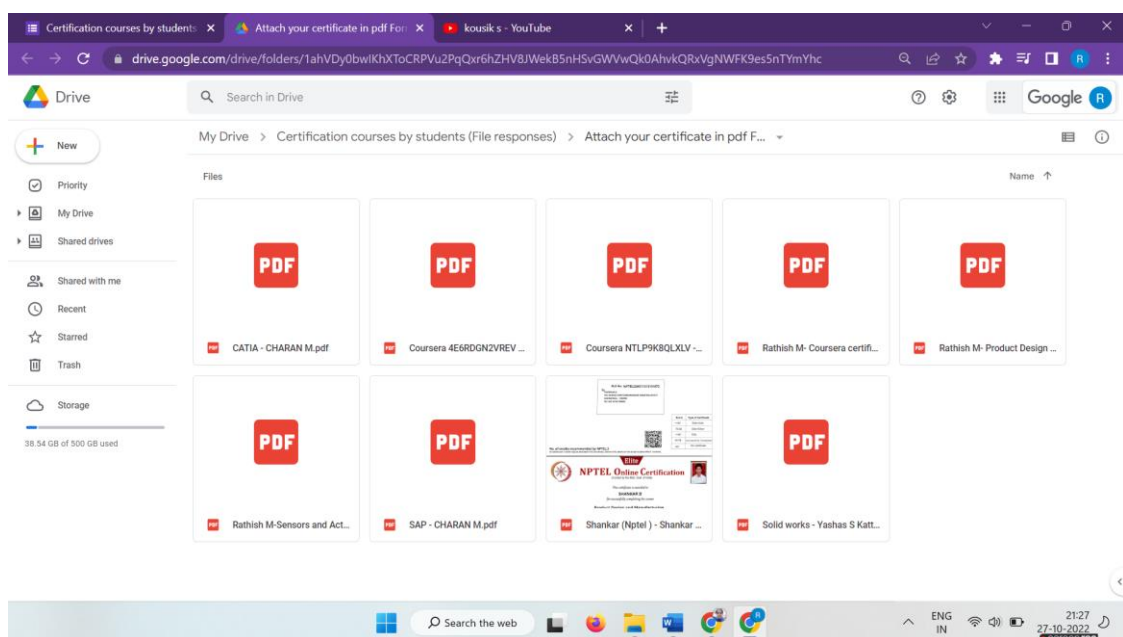


6. Massive Open Online Courses

Type of Innovation in Teaching & Learning Method: Learning through MOOCs

Objective: Students are encouraged to take up online courses for their subjects from various eminent platforms like NPTEL, Coursera, Edx, Udemy etc.,

Significance Results Observed: Students acquire knowledge in some contents beyond the syllabus from renowned institutions who share their courses on SWAYAM, Course Era, EDX, etc.



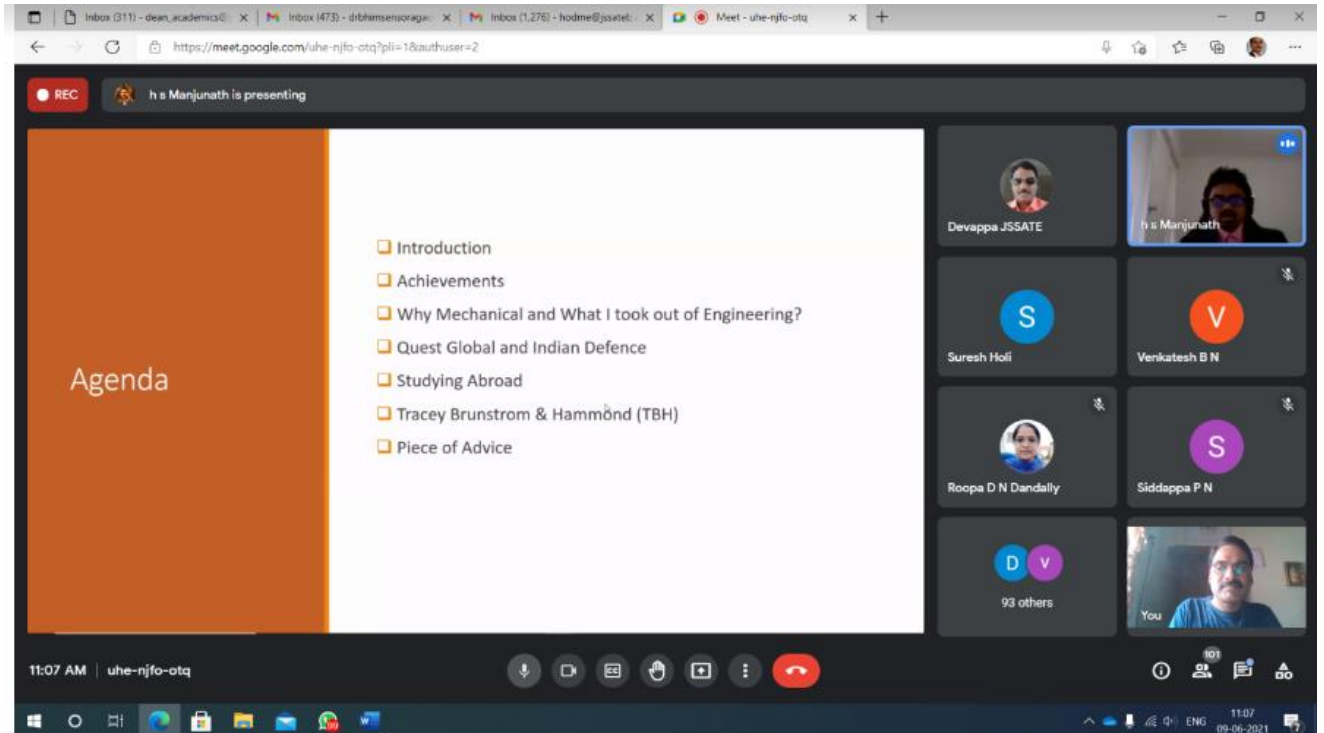
7. Alumni Interaction

Type of Innovation in Teaching & Learning Method: Alumni Interaction

Objective: It involves sharing knowledge by alumni working as a engineers in Industry with their juniors on practical grounds. There is much discussion about the degree of education and or certification that should be required for mechanical engineers.

Significance Results Observed: Students acquire knowledge from their peer group on recent trends in Industry, skills to be acquired to match the industry requirement.

Number: Each semester one session



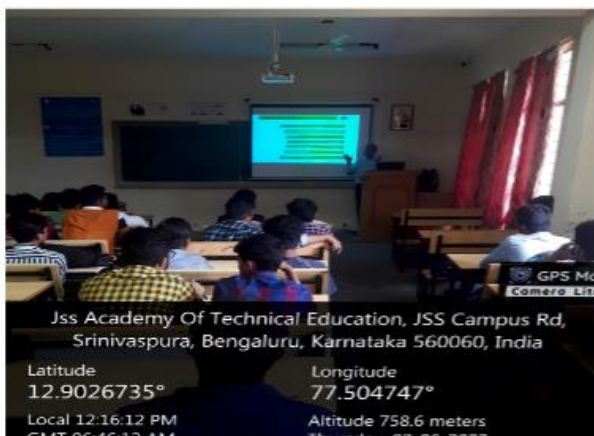
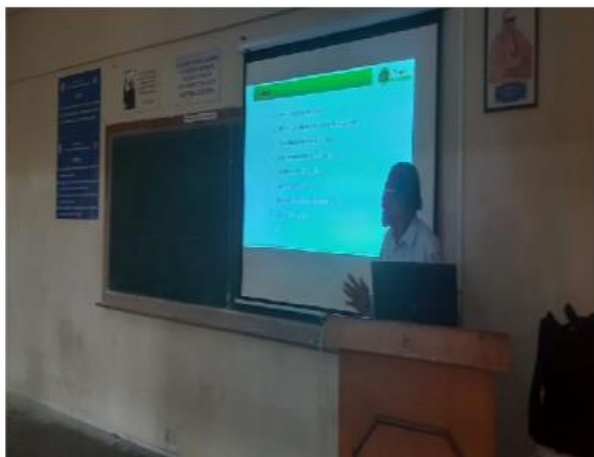
8. Expert talks

Type of Innovation in Teaching & Learning Method: Industry expert invited talks

Objective: Industry expert are invited for a technical talk and interact with the students.

Significance Results Observed: Students acquire knowledge and able to identify skill gap.

Number: Each semester one session



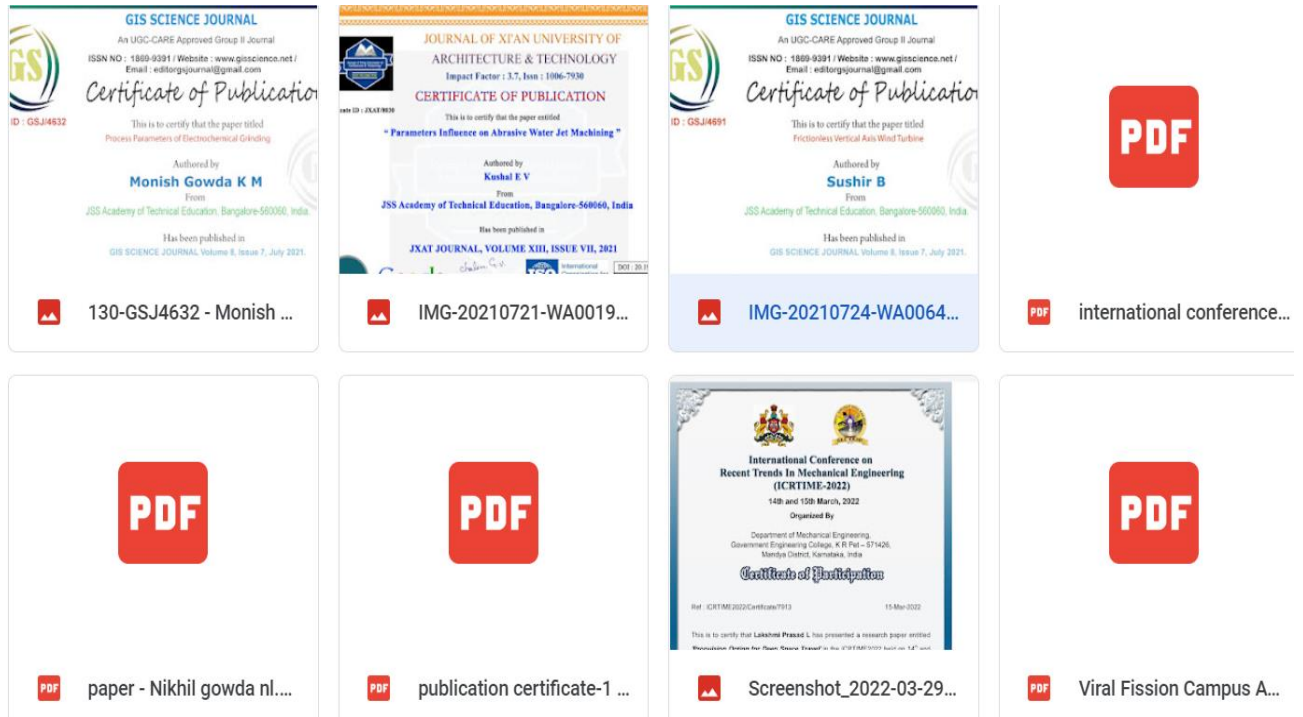
9. Group Discussions

Type of Innovation in Teaching & Learning Method: Industry expert invited talks

Objective: To make students develop communication skills

Timestamp	Email Address	Name	USN	Email:	Mobile:	Choose the topic you want to participate:	Any other suggestions to continuously improve the attitude of students:
10/25/2021 12:40:23	pruthvi1431988@gmail.com	PRUTHVI KUMAR V	1JS18ME453	pruthvi1431988@gmail.com	8892717372	Topic 2: Effect of Automation on the morale of Human Resource	Involving the mischievous in more group activities with different members
10/26/2021 14:14:27	prasadl4@gmail.com	Lakshmi Prasad L	1JS18ME429	prasadl4@gmail.com	8086814980	Topic 1: Outreach of funds to Afghanistan by India	-
10/25/2021 14:58:28	dharmeshpissey@gmail.com	Dharmesh P S	1JS18ME418	dharmeshpissey@gmail.com	7204891989	Topic 2: Effect of Automation on the morale of Human Resource	
10/25/2021 18:43:19	nitesh.girish4@gmail.com	Nitesh Girish	1JS18ME444	nitesh.girish4@gmail.com	9820049406	Topic 2: Effect of Automation on the morale of Human Resource	By Focusing on improving the attitude by the student.
10/26/2021 20:23:02	rsnandeesh@gmail.com	Nandeesh RS	1JS18ME438	rsnandeesh@gmail.com	7349027234	Topic 2: Effect of Automation on the morale of Human Resource	No
10/28/2021 1:38:33	yathishpatil88@gmail.com	B R YATHISH PATIL	1JS18ME018	yathishpatil88@gmail.com	9945775991	Topic 1: Outreach of funds to Afghanistan by India	We need to teach more about this kind of things for students
10/26/2021 9:01:19	manojmanoj223@gmail.com	MANOJ S	1JS18ME048	manojmanoj223@gmail.com	8792480847	Topic 2: Effect of Automation on the morale of Human Resource	No mam

10. Paper Publication by students in Journal/conference



11. Participation by students in project competitions



8/13/2022

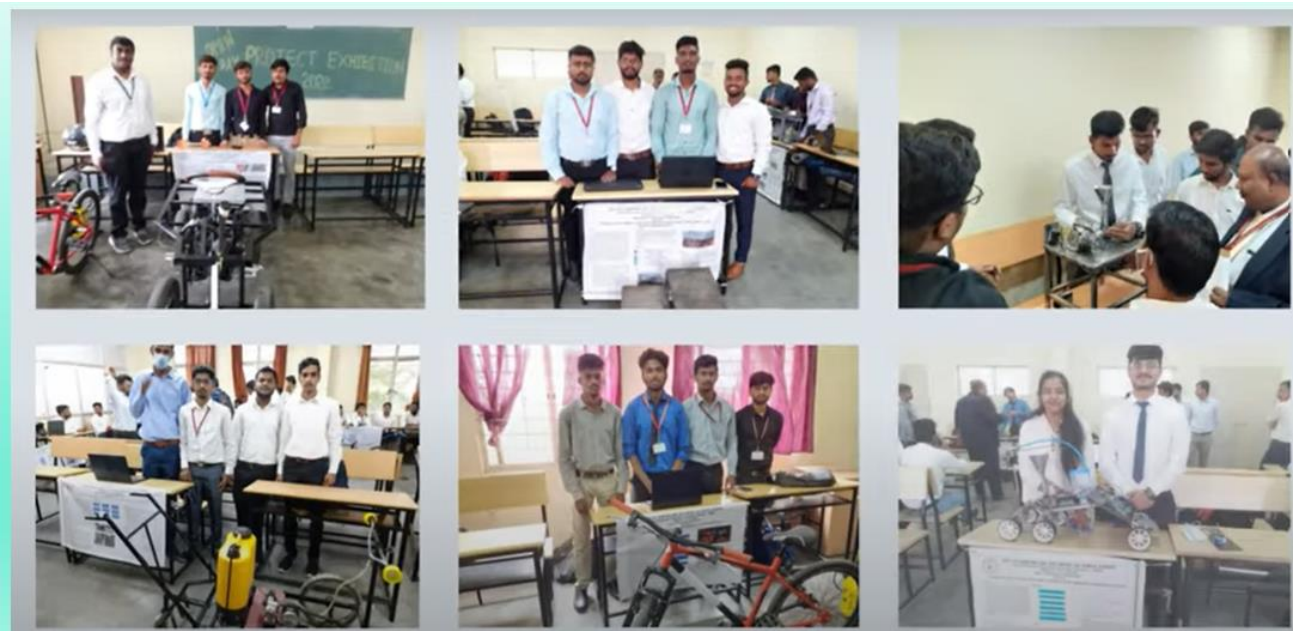
Keshav Project Team



Good afternoon sir and Madam Im happy share that our project won **Best seminar project of the year** 😊 . I would like to thank all of you for your support throughout the process

3:47 PM

12. Inhouse project exhibition



13. Tour-ATAL Tunnel Study Tour under AICTE's YUVAK Scheme 2021.

