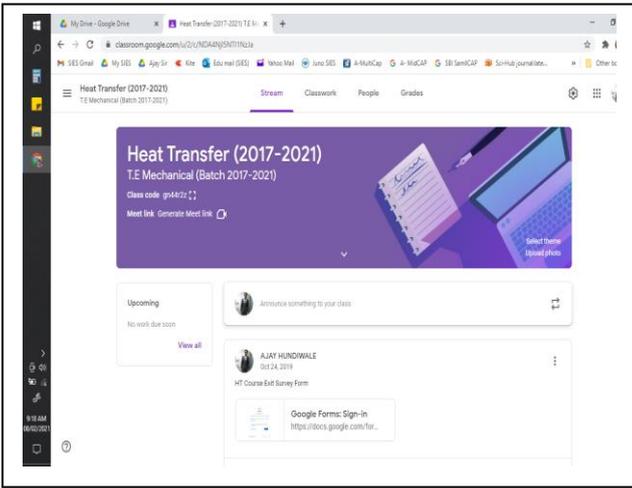


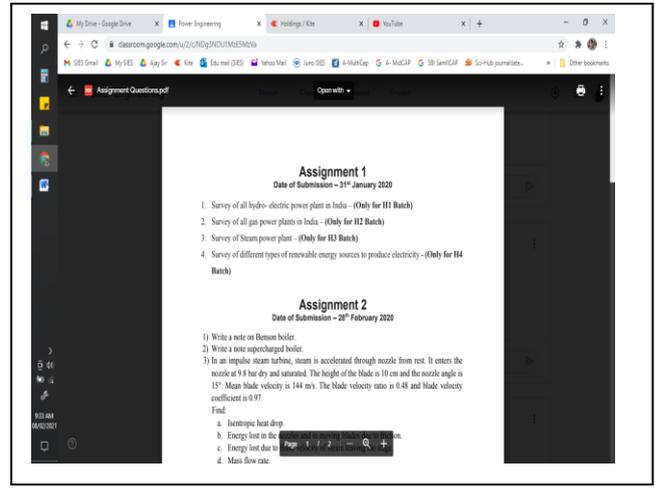
**FACULTY INNOVATION IN TEACHING AND CONTRIBUTION TO DEVELOPMENT ACTIVITIES**

The faculty members have developed innovative methods to improve the effectiveness of teaching – learning process. Few of them which can be put on record are as follows.

- a) Faculty members have created and uploaded video lectures on YouTube and available on website in faculty profile.
- b) Faculty have developed innovative methods to improve understanding of students. In subjects like engineering drawing and machine drawings, physical models are shown to students in class lectures and practical. This helps students to visualize the component easily and learn better.
- c) The faculty members who teach the courses related to mechanisms and machines, encourage students to make working models of the mechanisms through mini-project activity and demonstrate them in the classroom. This gives the students more clarity on working and synthesis of the mechanisms.
- d) The faculty members who teach the courses related to mechatronics and automation, encourage students to make working models to demonstrate the applications which use the concepts of mechatronics. This gives the students confidence and more understanding for developing real life mechatronic systems.
- e) The faculty members provide hands on experience of using modern tools such as Ansys, N.I. System, Simulink, PLC, etc. to the students by undergoing the relevant Theory courses.
- f) To have practical insight into the domain knowledge, field visits are arranged for subjects, like Renewable energy sources, production processes, refrigeration and air conditioning, etc
- g) Various live course project topics were assigned to the students and they were informed to form a group of four to five students where in they design the given live problem using standard design data book.
- h) To enhance Computer Aided Engineering (CAE) skills by solving field problems such as Thermal, Structural, Vibration Analysis etc and validation of numerical methods using Simulation/ CAE tool such as ANSYS 15.0
- i) Google classroom is created for students for effective communication, facilitate paperless communication between teachers and students and streamline educational workflow. It allows teachers to create classes, post assignments, organize folders, and view work in real-time.



Google Classroom



Assignments



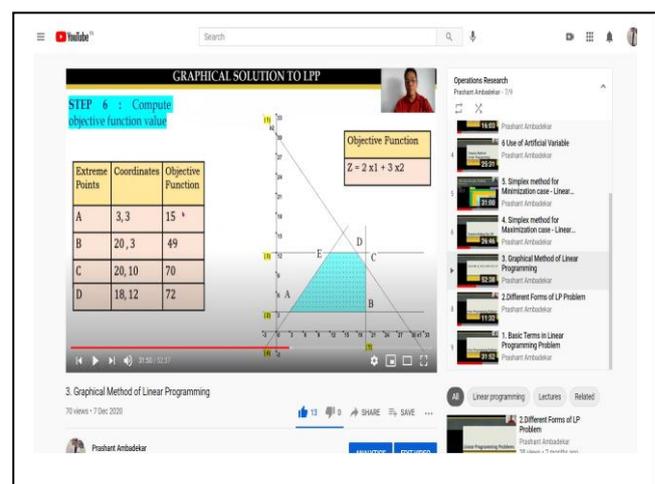
Tinker CAD



Drawing Models



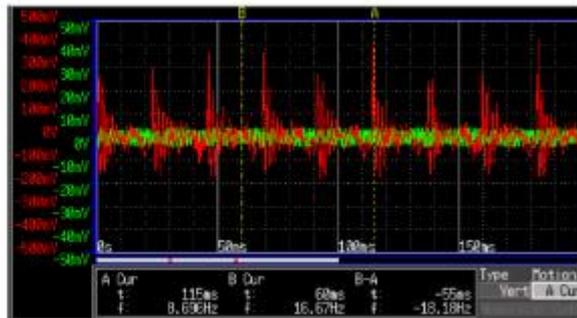
Machine Design Models



YouTube Lectures

The following are the development activities carried out by the department faculty.

- a. Experimental Setup Developed to evaluate the performance of vibration control of a blower.



Acceleration

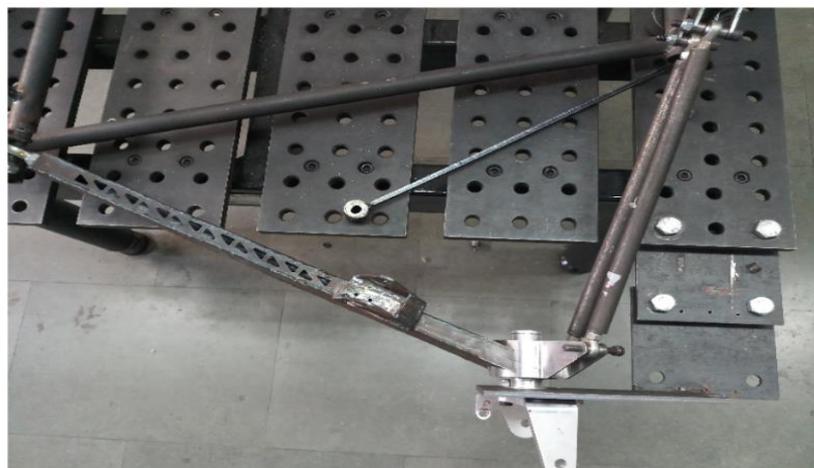
The vibration characteristics are observed and analyzed for different positions of the spring. The velocity and acceleration graphs represents the aberration of characteristics and location.

- b. Developed and modified constant velocity shaft by using telescopic shaft for all-terrain vehicle for performance improvement of all-terrain vehicle.



Developed telescopic shaft for all-terrain vehicle for providing constant velocity and in the process of filing patents.

Optimized and developed a suspension geometry for swift turning of all-terrain vehicle to perform a one point turn.



Developed and optimized suspension geometry for swift turning of all-terrain vehicle to perform a one point turn. This mechanism improves the manoeuvrability of the vehicle.

- c. Faculty members have developed course material and available on Institute website.



### PRODUCTION PROCESS-III

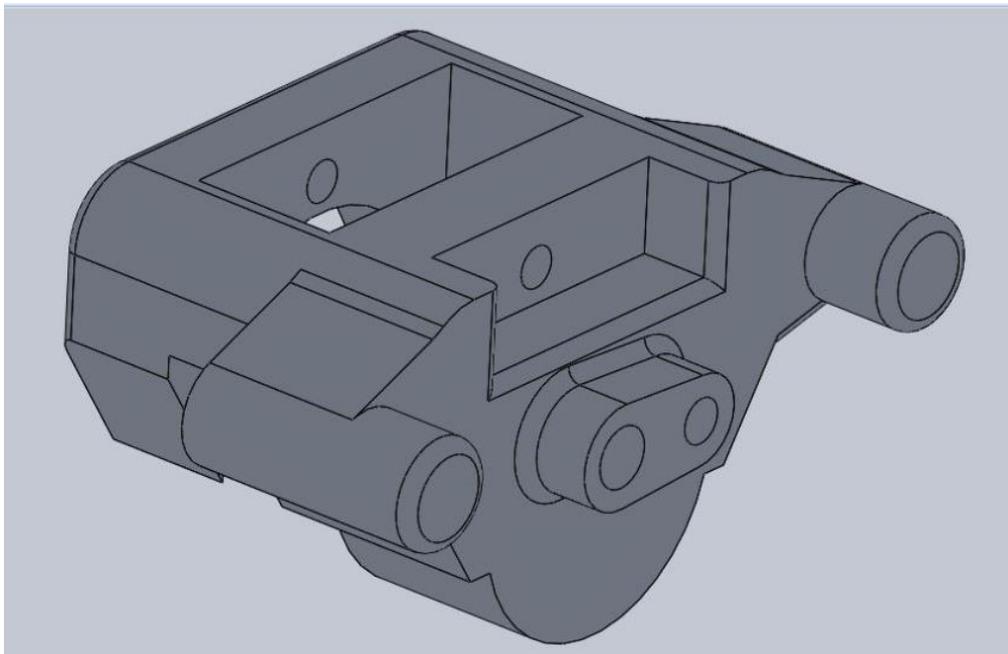
Course notes and ppts

- [Syllabus](#)
- [Module 1](#)
- [Module 2](#)
- [Module 3](#)
- [Module 4](#)
- [Module 5](#)
- [Module 6](#)

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The course material is developed and available to the public. In addition to this video lectures are prepared and available to the public online.

- d. Customization of brake caliper for efficient braking system for all terrain vehicles.



This brake caliper is customized for providing efficient braking in the vehicle.

- e. Setup developed a liquid desiccant based fresh air dehumidifier.

The function of this air-dehumidifier is to cool the area efficiently with less energy input.

- f. Developed for demonstration a wooden model of cotter joint required for subject Machine Design and cone for subject Engineering Drawing



The models are developed for improving the learning experience of students in subjects like, Engineering Drawing, Machine design, Computer-aided Machine Drawing.