

Innovative Teaching Method Practices

- The department of ECE consists of experienced, qualified and dedicated teaching faculty and laboratory supporting staff in various domains of electronics and communication engineering fields. All the faculty members are available as per the eligibility norms prescribed by both JNTUA and AICTE.
- Faculty members of the ECE department adopt and follow innovative teaching methods in the classroom in addition to the chalk & Talk, PPT and sharing course materials and questioning in every class like conventional methods.
- The following are the various innovative teaching methods being implemented to impart the knowledge in the various courses.

S. No	Faculty Name	Innovative Teaching Methods
1	Mr. MNL Narayan Singh	Group Discussion
2	Mr. Sk. Khader Basha	Tech Talk
3	Mr. P. Raghava Reddy	Game based learning
4	Mr. P. V. Krishna Rao	Field visits
5	Dr. K. Radhika	Flipped Classrooms
6	Mr. K. Naveen	Case Studies
7	Mr. G. Kiran Kumar	Video Clips (short video animation)
8	Ms. M. Suhasini	Mind & Puzzle maps
9	Dr. Syed Jeelan Basha	Fish Bowl
10	Mr. G. Suresh	Think Pair Share
11	Mr. K. Chandrasekhar	Flowcharts
12	Mr. U. Penchalaiah	Miniproject
13	Dr. Sk. Mahaboob Basha	Miniproject
14	Dr. P. Rahul Reddy	Prototype
15	Dr. D. Regan	Poster
16	Mr. S. Sreenivasulu	Experimental Learning
17	Mr. T. Suneel Kumar	Role plays

- **Video/Animation Clips Presentations:**

Faculty members prepare video and animation clips presentations on their courses with certain topics to make students better visual understanding. With this video and

animation clips presentation, concerned topic in the courses delivery helps the students to have clear understanding on that topic.

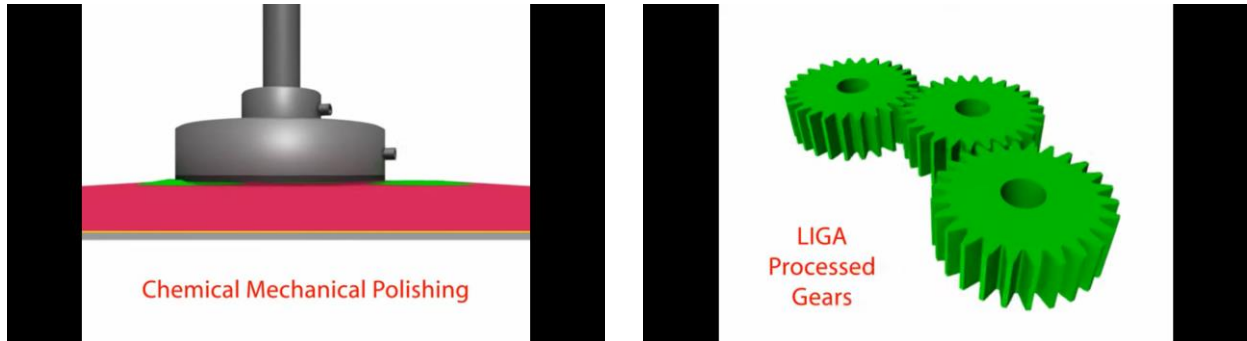


Figure 3 LIGA Micromachining Process

- **Experimental Learning:**

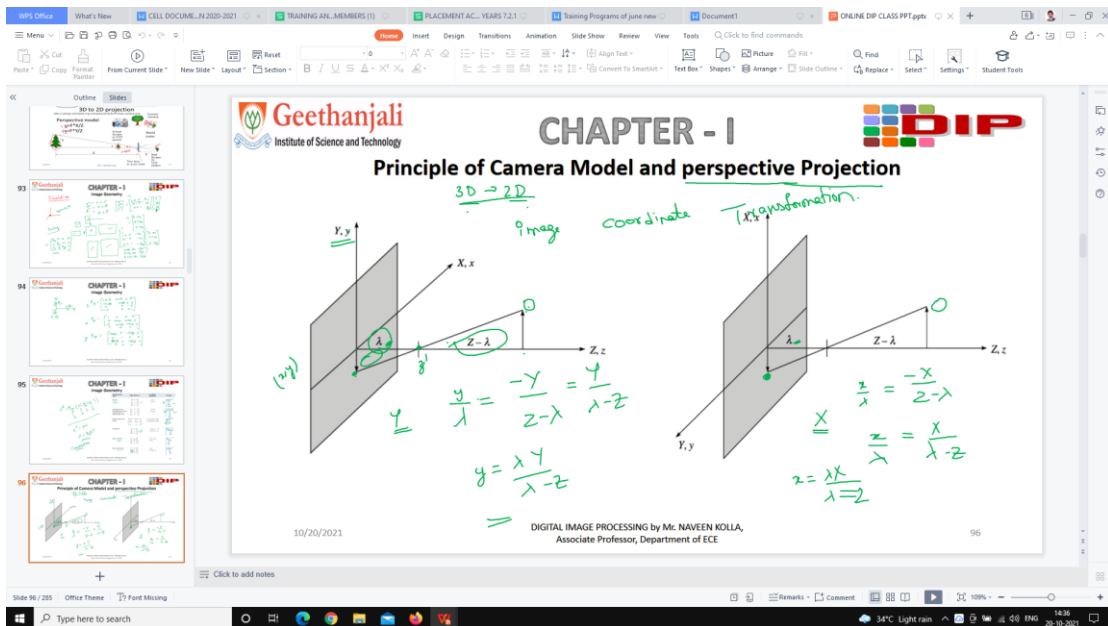
Some concepts of the course are taught to the students with the aid of laboratory real time demonstrations. All the students are engaged in the laboratory and that topic is experimentally demonstrated. This makes the students to grasp the working principles of the equipment, their characteristics with the theoretical counterparts. Hence this experimental demonstration helps the students to connect solid-rough theoretical concepts and their applications easily.



Figure: Experimental Learning

- **Development of Course E-Content:**

Faculty members prepare E-Content of courses and these all E-Contents of courses are scrutinized, reviewed by department faculty experts in the concerned courses. These e-content course materials are shared to students for better understanding the courses.



And all these E-Contents are made available to students through YouTube all time accessing purposes.

<https://www.youtube.com/watch?app=desktop&v=W10EPhH4e3s&feature=youtu.be>

- **Industrial Visits:**

Students are taken for industrial visits to familiarize them with industrial practices and have thorough understanding of engineering principles and their practical application related core electronics and communication engineering concepts. It also affords the students to catch up the insights regarding working of prestigious R&D organizations.



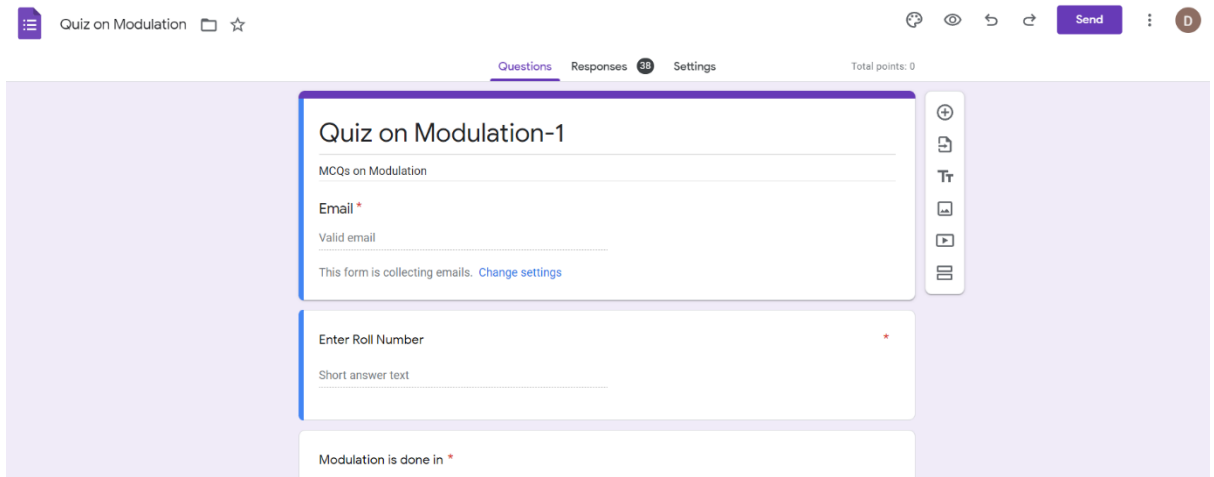
Figure: Industrial Visit to NARL

- **Collaborative Learning:**

Faculty members make the platform to the students to expose their talents and foster creativity as individual and group environment to exchange their ideas and knowledge.

- **Technical Quiz:**

The faculty concerned conducts technical quiz on the certain topics of the courses at the end of every unit of the syllabus both on regular classes and online mode. This technical quiz enables the students to understand the courses' content in precise and depth manner.



The screenshot shows a web-based quiz interface. At the top, there is a navigation bar with 'Quiz on Modulation' and a star icon on the left, and 'Send' and a user profile icon on the right. Below this is a secondary navigation bar with 'Questions', 'Responses' (with a count of 88), and 'Settings'. The main content area is titled 'Quiz on Modulation-1' and contains three input fields: 'MCQs on Modulation', 'Email *' (with a 'Valid email' error message and a 'Change settings' link), and 'Enter Roll Number' (with a 'Short answer text' error message). A 'Modulation is done in *' field is also visible at the bottom. A vertical toolbar on the right side of the main content area contains icons for adding, deleting, and other actions.

- **Usage of NPTEL courses contents:**

To inculcate lifelong learning among students, faculty members use online NPTEL lectures and material from the reputed institutions to hone their knowledge. Also many faculty members got certified in NPTEL courses.

- **Game based learning:**

Game based learning is where game characteristics and principles are embedded within learning activities of the certain topics of the courses. In this, learning activities promote student engagement and motivation to learn the concepts of the topics in the concerned courses.



Figure: Game based learning

- **Open source based simulation and Virtual Labs:**

To have depth of knowledge in simulation based laboratory courses, faculty does the Scilab based simulation in the certain laboratory courses which enables the students learning effortlessly. Also Virtual labs are made available to students. This will facilitate the students to have better learning, development of skills and competencies, investigation through experiments and self-learning.

- **Printed laboratory manuals with observations:**

All the laboratory course manuals with sample readings are available in the laboratories for the student's reference. In addition to the list experiments prescribed by the JNTUA, faculty implements list of additional experiments to cover more concepts under the particular laboratory course. Also all these manuals are revised and updated every year whenever syllabus is revised by JNTUA. The printed observations are provided to the students with all the experiments. Faculty are encouraging the students to do the mini projects in the project laboratory. Charts, lab information posters and popular scientists' portraits are hoarded in each lab for reference.

- **Wi-Fi and LCD Projector enabled Class Rooms:**

To instill and create an interest and attention over the courses, faculty members have been following various innovative teaching methods. Also all the class rooms are equipped with the LCD projector and PC facility connected to internet, and Wi-Fi access provided for effective power point and video presentation during courses delivery.