INNOVATIVE TECHNIQUES USED FOR TEACHING

Some of the innovative techniques used by the faculty members in the department.

- Single Platform for all resources
- Online Platform for laboratory course
- Ed Puzzle based lectures videos
- Innovative Teaching methodology
- Simulation-based teaching-learning
- Project-based teaching-learning

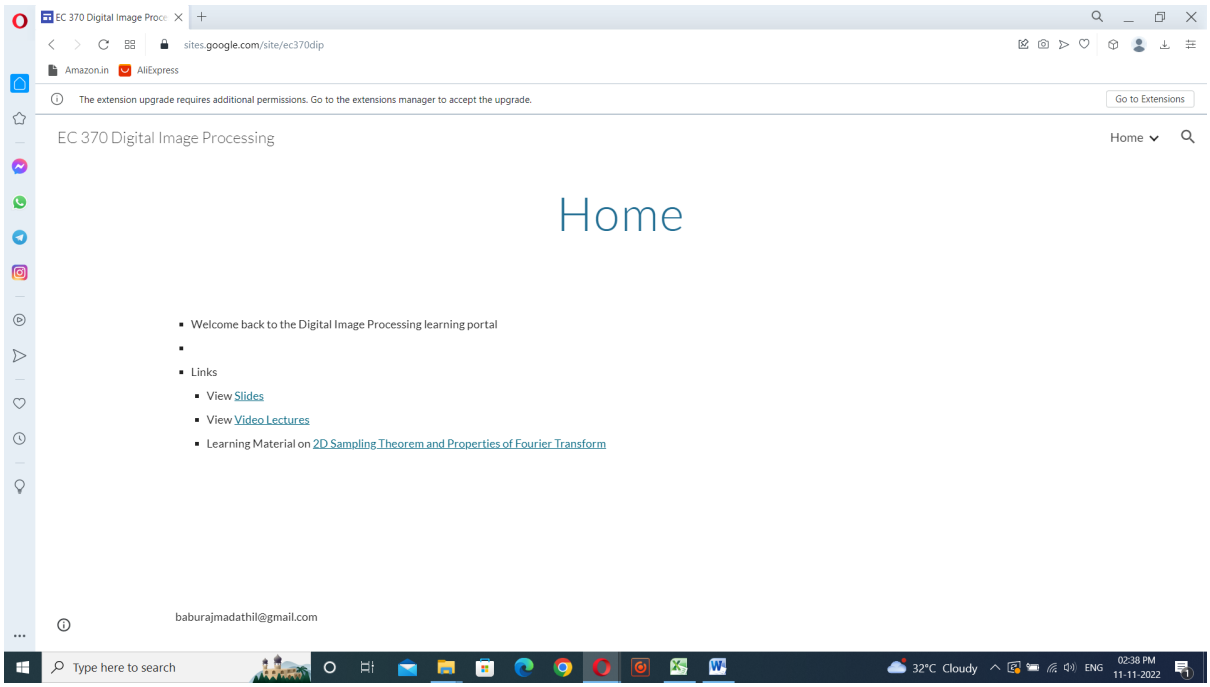
Single Platform for all resources

EC370 Digital Image Processing

Dr. Baburaj M, developed a single online platform to upload and view slides, video lectures, study materials, assignments, tutorials and program codes. It was developed using google sites. (https://support.google.com/sites/answer/98081?hl=en)

This enables the students to access all the materials with ease.

Link: https://sites.google.com/site/ec370dip

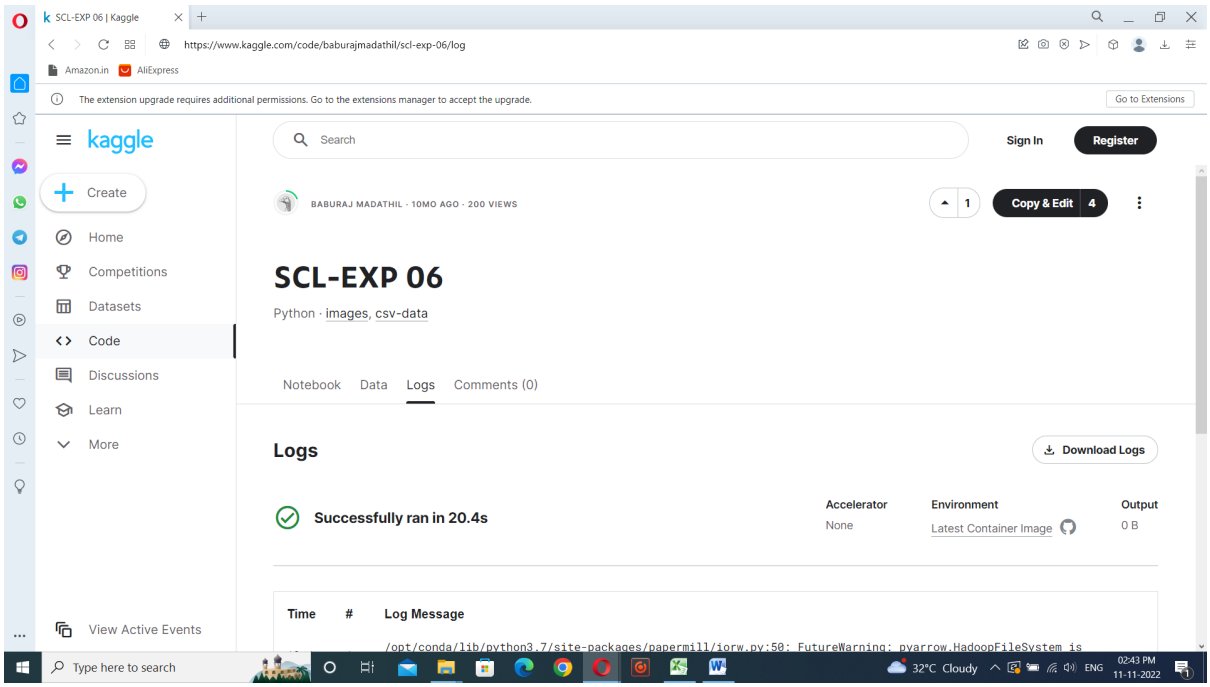


Online Platform for laboratory course

ECL201 Scientific Computing Laboratory

A single online platform was created by Dr.Baburaj M., to access the program codes related to the experiments for the course ECL201 Scientific Computing Laboratory. Students can access the code and run the code on the same online platform.

https://www.kaggle.com/code/baburajmadathil/scl-exp-06/



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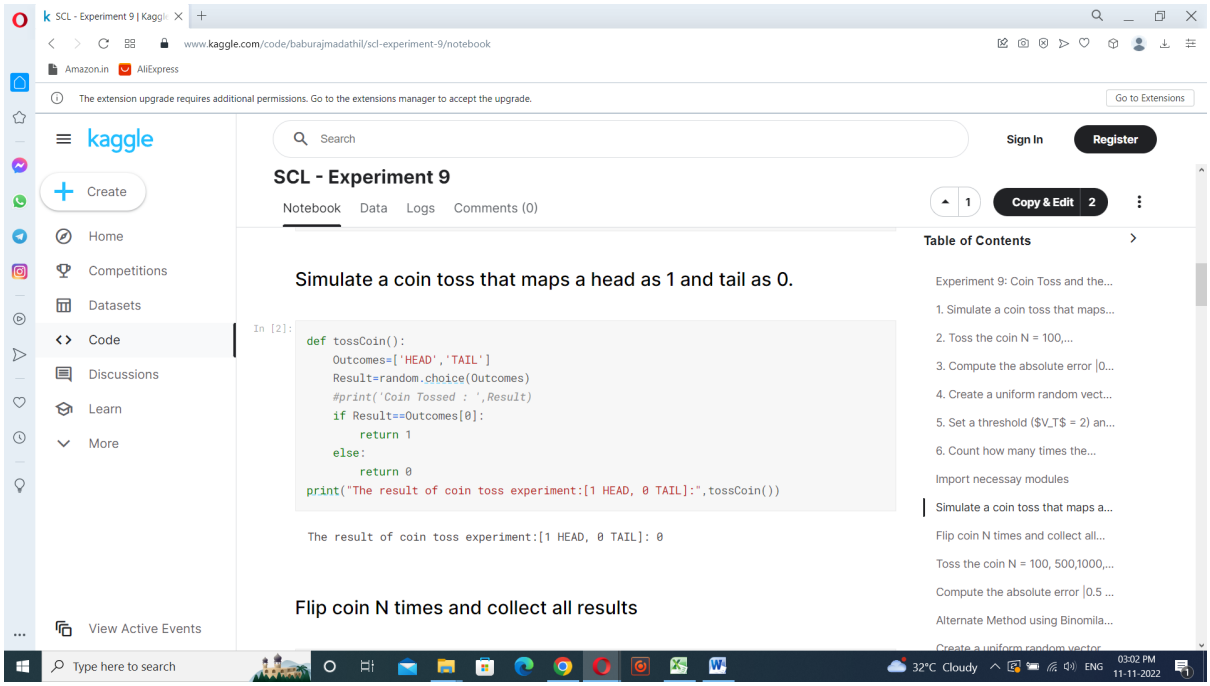
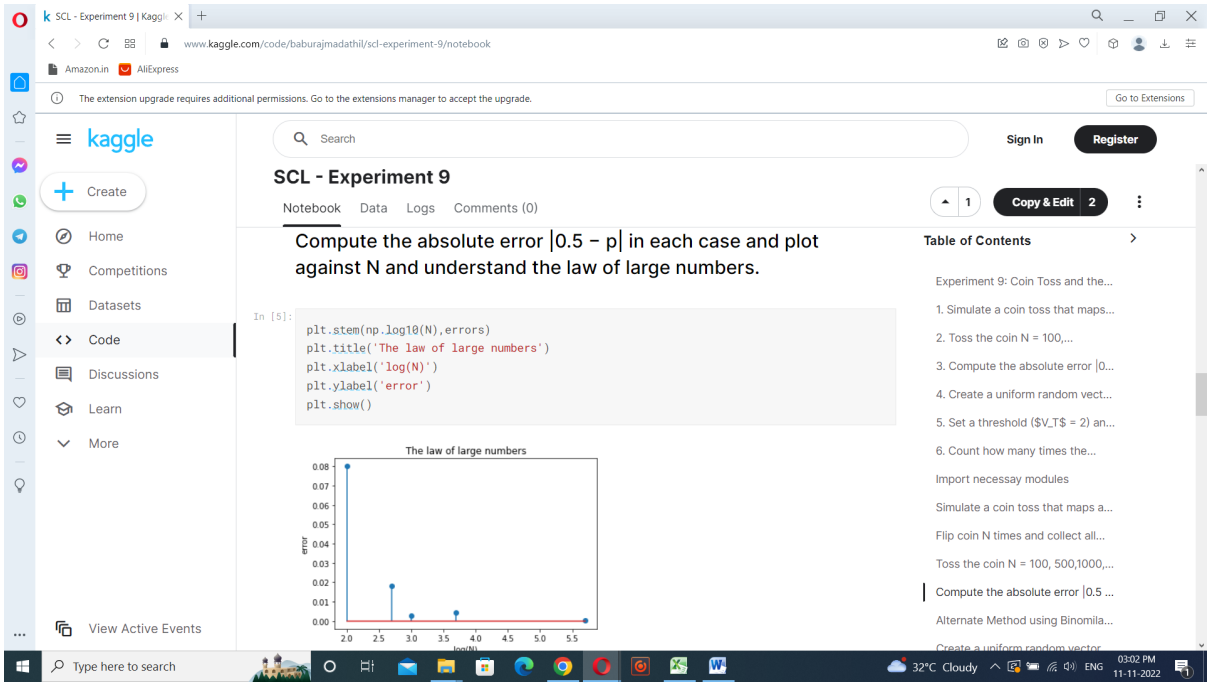
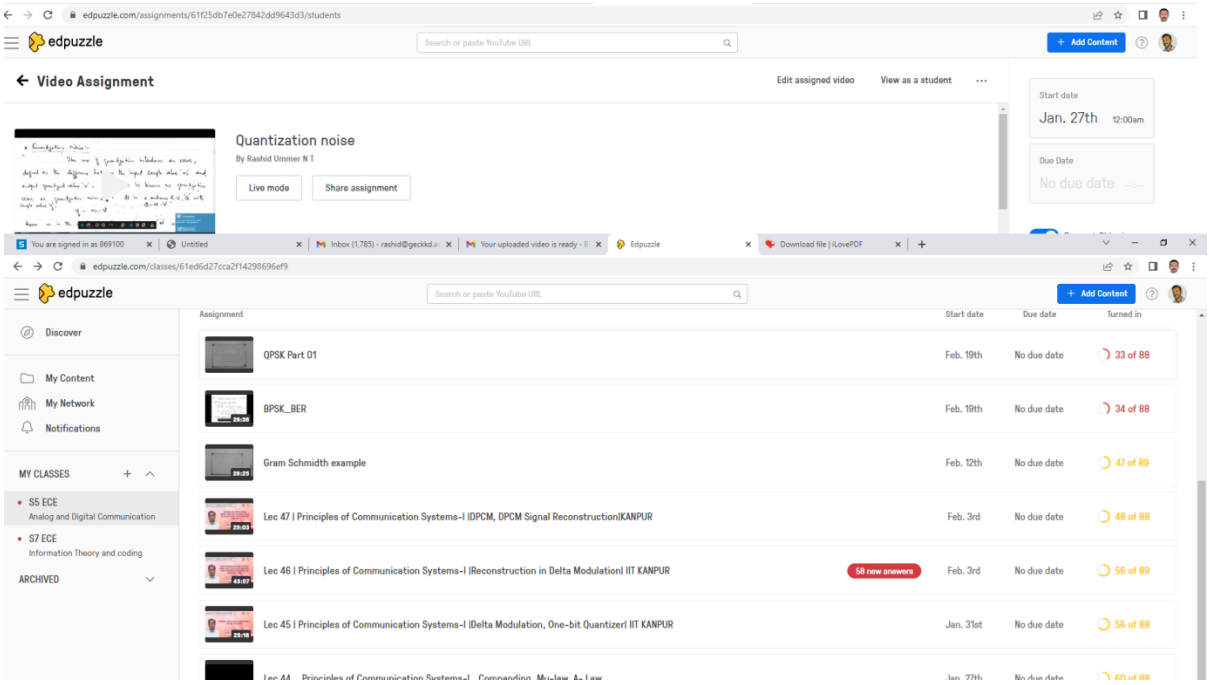
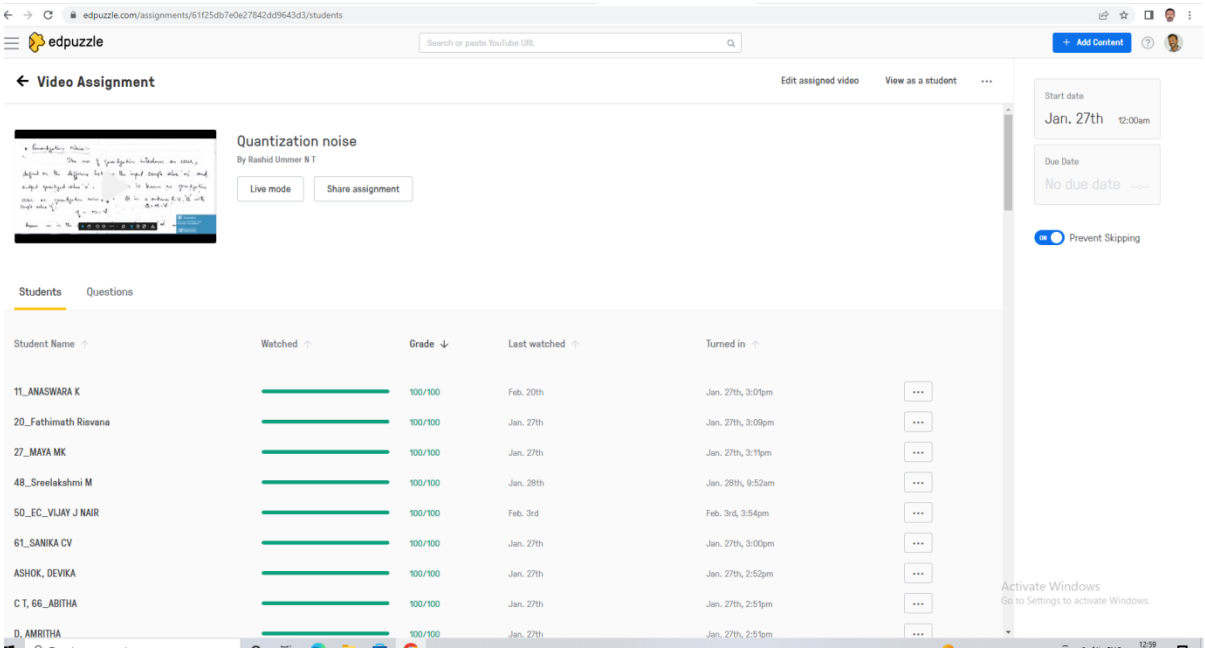




Ed Puzzle based lectures videos

Ed-puzzle is a web platform to share videos in which the faculty member can monitor the duration for which the student has watched the video. Faculty members can also embed questions in the video to assess their understanding of the content. Ed-puzzle empower students to take an active role in their learning with interactive video lessons that spark creativity and curiosity. This was highly effective especially during the covid pandemic period where the classes were conducted in online mode. This platform was used by Sri.Rashid Ummer N T. to teach the subject Digital Communication for 5th semester B.Tech Electronics and Communication Engineering students.





Innovative Teaching methodology

An innovative teaching strategy was developed by Dr. Ahammed Muneer K V. This strategy can be effectively used for online classes as well. This method helps to convey topics effectively. All the sessions taken in this methodology starts by explaining the course outcomes. Illustrations were done using teaching aids like animations.

To make the sessions more interactive, groups were formed to enable peer group learning. As part of this, peer group learning strategies were introduced.

At the end of sessions, games are conducted to increase interactions and to access the knowledge attained during the session. This also helps to assess the achievement of outcomes expected during the session.

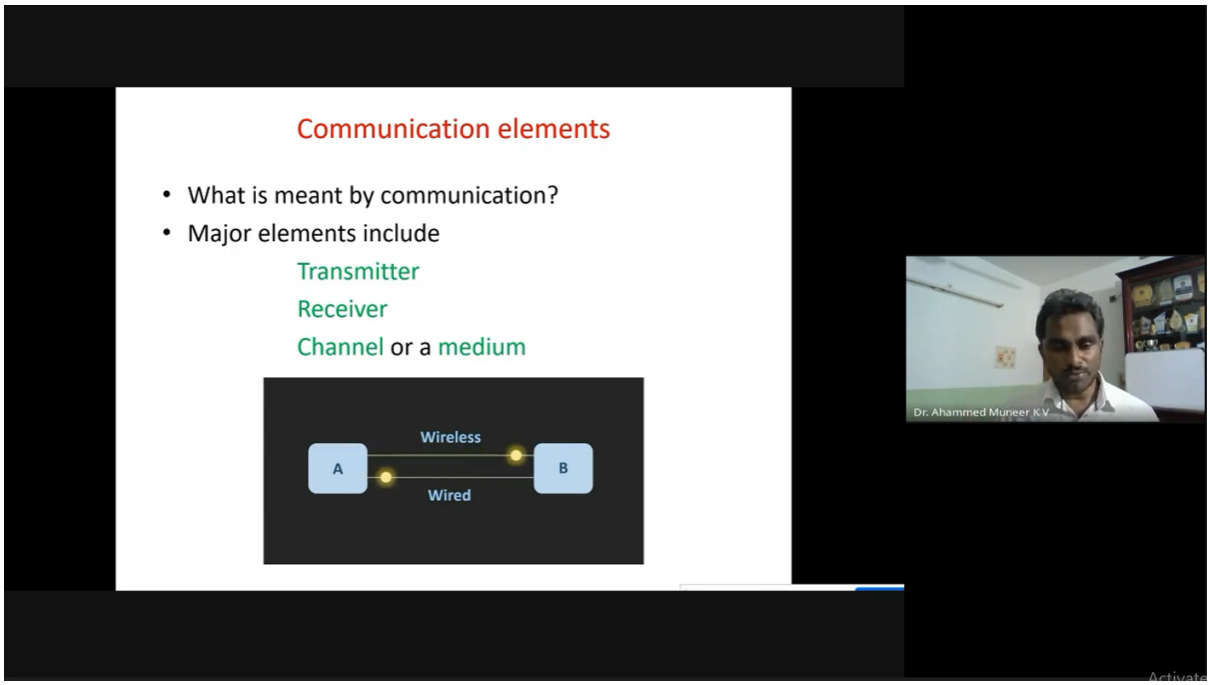
The games were mostly Question Answer sessions where students were answering in peer groups already formed and points were awarded to each group. The questions were of mostly Multiple Choice Question type and bonus were awarded if any group got more points than a cut off. This will motivate the peer groups to be more active during the QA session. The bonus points can be considered as grace marks towards the internal marks.

After two years of implementation of this strategy, in september 2021, this strategy received special mention by the jury during the state level 3 minute video challenge conducted by GTech **μ**learn in association with KTU.

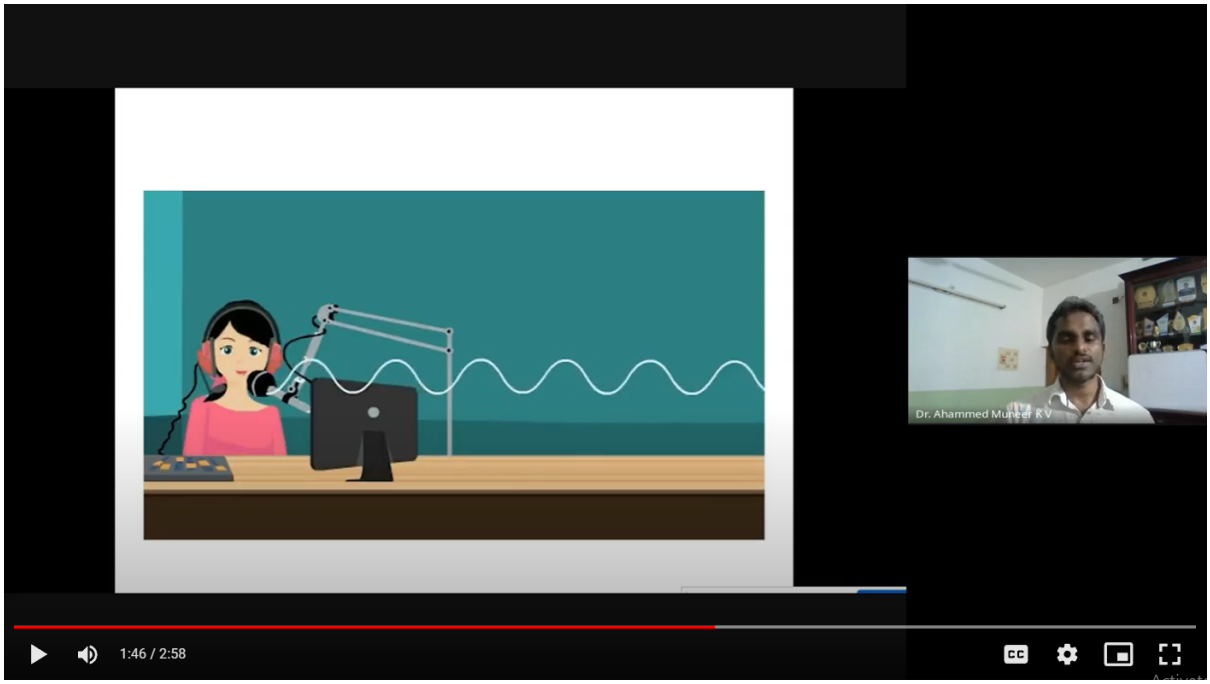
https://drive.google.com/file/d/1VzSGuRN2LblJNnlrV1carH68bs0rHUlm/view?usp=share_link

This strategy is also published as a paper publication.

https://drive.google.com/file/d/1h7LgsaTzw53EyjaMXRHpi2fvovVGYjU4/view



Screenshot from the lecture by Dr. Ahammed Muneer K V using innovative teaching method.



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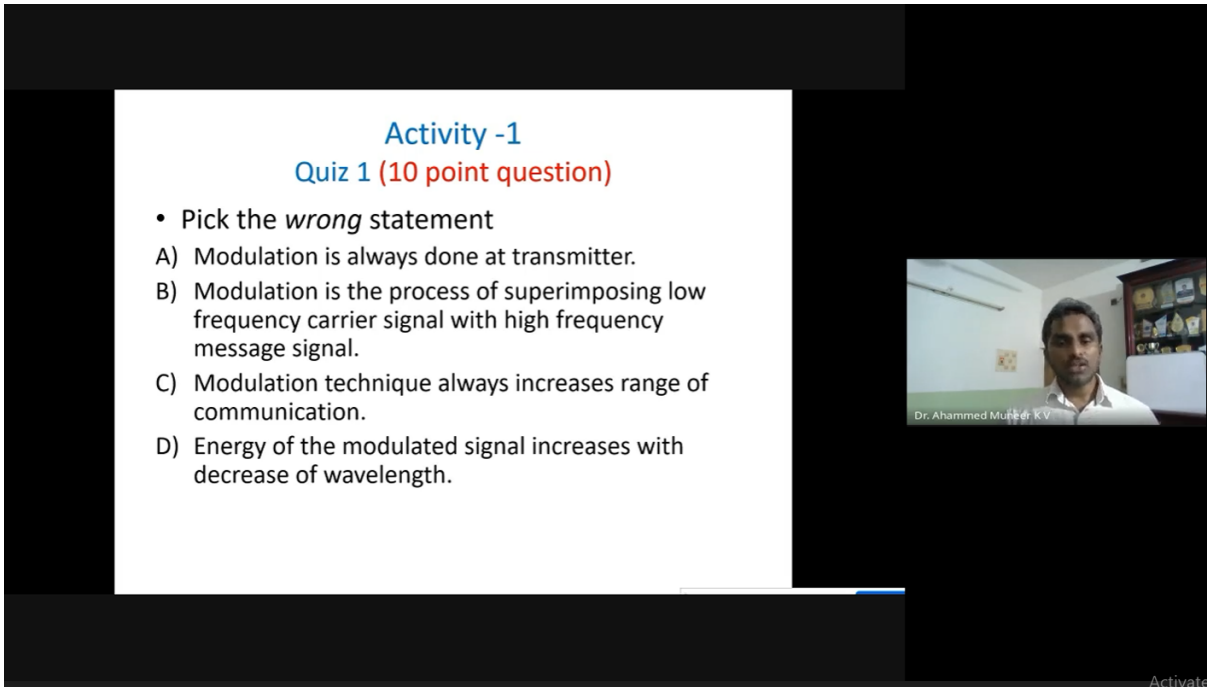

Screenshot from the lecture by Dr. Ahammed Muneer K V using an innovative teaching method.

Simulation-based teaching-learning

Simulation is a technique for practice and learning that can be used to replace and amplify real experiences with guided ones. It evokes or replicates substantial aspects of the real world in a fully interactive fashion. Simulation based learning is applied in designing structured learning experiences, as well as used as a measurement tool linked to targeted teamwork competencies and learning

objectives. Simulation-based teaching helps the student to learn the importance of mitigating errors and maintaining a culture of safety in related industries where any deviation from set standards is critical.

Sri. Sreeram M introduced this method for the subject Signals and Systems. The simulation based learning of signal processing principles was done using python and students demonstrated it as an assignment. A sample assignment is also provided for review.

https://drive.google.com/file/d/1DWro7DLWupDzLP6LxCj-tttGEGMzdarn/view?usp=share_link

Project-based teaching-learning

Project based learning was used by Sri. Sreeram M, for the subject ECT332 Data Analysis. Students were made into groups of two. Each group was asked to select atleast three topics relevant to the subject. After review, topics were finalized and students were given time to work on the project and demonstrate the final results. Topics for the subject were arranged in a way that students could gain knowledge necessary to proceed with the project.

Sample project report is provided for review.

https://drive.google.com/file/d/1nGlgM2WqBLdalHg_HlhibY5dmzLZEZAJ/view?usp=share_link