



Sant Dnyaneshwar Shikshan Sanstha's
ANNASAHEB DANGE COLLEGE OF ENGINEERING & TECHNOLOGY, ASHTA
An Autonomous Institute
Department of Electrical Engineering

A brief Report on Innovations by Faculty in Teaching and Learning

1. Name of the Innovation activity in Teaching and Learning:

- a) Problem solving using Programming based assessment strategy
- b) YouTube Videos by faculty

2. Course Code and Course Name : 1EEHS409 Power System Analysis

3. Class: T.Y.B.Tech (A & B), Semester:V Academic Year: 2023-24

4. Name of Faculty: Miss. J. M. Kharade

Name of Faculty: Mr. A. S. Ghodke

5. Introduction

a) Problem solving using Programming based assessment strategy

Power system analysis deals with the study, design, and operation of electrical power systems. It focuses on understanding the behavior of electrical networks encompassing generators, transformers, transmission lines, distribution systems, and loads. The primary goal of power system analysis is to ensure the reliable, stable, and efficient delivery of electrical energy from generation sources to end-users. This involves various analyses such as load flow studies, fault analysis, transient stability analysis.

By incorporating programming-based problem-solving activities into the curriculum, we can enrich students' learning experiences, foster critical thinking skills, and prepare them for successful careers in the dynamic field of power system analysis.

6. Motivation/ purpose of Innovative technique:

- Active Learning
- Practical Application

- Critical Thinking
- Enhanced Understanding
- Create interest among students

7. Suitability of techniques with course content:

Power System Analysis is a complex course with many concepts and analytical treatment. Programming-based problem-solving techniques align well with the course content of power system analysis, offering students a versatile and effective platform for exploring, understanding, and applying the principles and methods covered in the curriculum.

8. Procedure followed:

1. The activity is conducted by forming group of 4-4 students.
2. Different problems statements given to each group.
3. The students are encouraged to study and solve the problems manually as well as using MATLAB Programming.
4. Deadline is given for submission of the solved problem and programming based problem solution with effective report submission.
5. Based on the knowledge, accuracy, presentation skills and timely submission assessment is carried out.
6. Approximately 20 Numerical completed and solved by students and made available to them for study.

9. Evaluation/ Assessment Process Followed:

The evaluation is conducted with rubrics analysis considering 20 marks for analysing Problem understanding, Analysis of Problems, Programing skills, submission of report.

10. Photograph of the event: If available

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11. Outcomes of the Technique:

Programming-based problem-solving activities for power system analysis yield a range of positive outcomes for students, including enhanced understanding, improved problem-solving skills, technical proficiency, practical application, interdisciplinary learning, collaboration and communication, confidence building, and fostering innovation and creativity.

12. Core competency involved:

- Programming Proficiency
- Mathematical Aptitude
- Electrical Engineering Knowledge
- Problem-Solving Skills
- Algorithm Development

b) YouTube Videos by faculty

1. Motivation/ purpose of Innovative technique:

- Accessibility
- Visual Learning
- Supplementary Learning
- Professional Development

2. Suitability of techniques with course content:

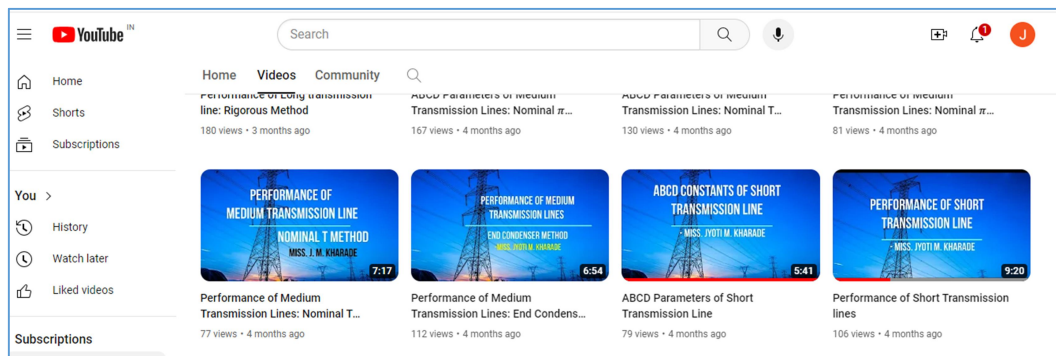
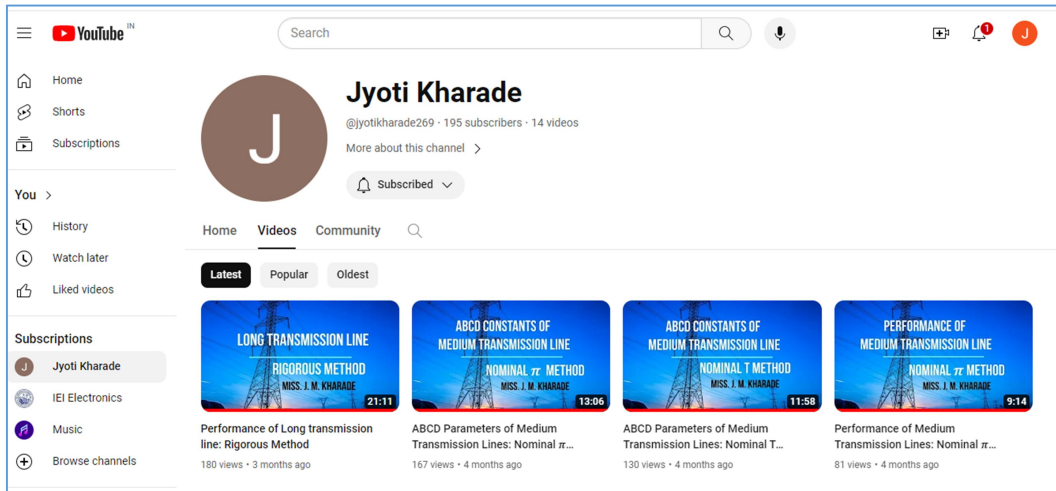
YouTube videos are highly suitable for power system analysis courses, offering visual representation, demonstrations, flexible learning, supplementary resources, accessibility, engagement, community interaction, and opportunities for feedback and assessment.

They enhance the overall learning experience and contribute to students' comprehension and retention of complex power system concepts.

3. Photograph of the event: If available

Created YouTube Videos links:

1. Performance of Short Transmission Lines
<https://youtu.be/uTr1bAFMxqk?si=XNqkSSRKvwh3b3d0>
2. ABCD Parameters of Short Transmission Lines
<https://youtu.be/I0j1jcWrIwo?si=TWa7u3vgq2jwSsWI>
3. Performance of Medium Transmission Lines: End Condenser Method
<https://youtu.be/PIUsfrZryO4>
4. Performance of Medium Transmission Lines: Nominal T Method
<https://youtu.be/wgeJtvDKiuw?si=JzahR-pd7BsqbEa8>
5. Performance of Medium Transmission Lines: Nominal π Method
<https://youtu.be/RkzVvc4PLE0?si=yFz3r7krdvt9PaRH>
6. ABCD Parameters of Medium Transmission Lines: Nominal T Method
<https://youtu.be/QK0o0dd4Smo?si=qFZPn1OKeJZBKoVS>
7. ABCD Parameters of Medium Transmission Lines: Nominal π Method
https://youtu.be/b_BzOXmSjK8?si=7uyE_1zGLL8hvG0U
8. Performance of Long Transmission Lines: Rigorous Method
<https://youtu.be/LimTrb4pC2g?si=-Od2a1SRR6TE83k7>



Conclusion:

Together, programming-based problem-solving activities and YouTube videos created for students played a dynamic and interactive learning environment that makes deeper understanding, critical thinking, and collaboration among students.

Subject Incharge:

1. Miss. J. M. Kharade
2. Mr. A. S. Ghodke