



**Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering**

Program- Civil Engineering

Year: 2022-23

Course- Geotechnical Engineering Laboratory (BTCVL 509)

Class: T.Y. B-Tech Sem-V

Date: - 19/12/22, 23/12/22

Innovative Teaching Method – Reflection Through Self Learning

(Lab Co-Ordinator- Prof. S.B Jagdale)

Objective:

To encourage students to learn more effectively.

To generate curiosity and motivate them for further discovery.

To improve self-esteem, problem-solving skills.

Give sufficient time for learning with comfortable pace.

Improves time-management, team building and communication skills.

Introduction:

Under innovative teaching method Reflection Through Self Learning activity was assigned to T.Y B-Tech students for soil mechanics laboratory. In this activity students have chosen one experiment as per their choice which they executed in following steps.

Procedure: -

1. Read the experiment and thoroughly study step by step procedure.
2. Prepare the apparatus and make the assembly ready for performance
3. Preparation of soil sample.
4. Performance of experiment.
5. Calculations and explain nature of graph
6. Discuss Result and conclusion.

In this activity three batches participated. Each batch consist of 18 students. The entire batch was divided into 3 subgroups. Each batch chose one experiment. Carried out entire experiment as per above steps and further demonstrated the experiment to other two groups, This method was followed in remaining batches also. Sufficient time was given to them to learn and perform at their own speed. Photos and videos are taken of this activity.

Following experiments were chosen by the students,

1. Direct shear box test
2. Unconfined compression test
3. Consolidation test.

Students those who were absent for this session were given a chance to demonstrate via repeat activity.

Web Links:-

Following web links were referred by students,

National Institute of Technical Teachers Training Institute, Chandigarh

<https://www.youtube.com/watch?v=M4TNKwuSnAk>

<https://www.youtube.com/watch?v=kFWYrD9sG7c>

<https://youtu.be/-M0PHt7uhFI>

<https://youtu.be/bmpn5oNDvOs>

<https://youtu.be/M4TNKwuSnAk>

<https://www.youtube.com/watch?v=bmpn5oNDvOs>

Reference Books:-

- 1) Geotechnical Engineering by Purushothama Raj
- 2) Soil Mechanics and Foundation Engineering by B.C. Punima

Outcomes:

Students shared following benefits which were noted at the end of the session,

- 1) Could derive extra knowledge due to books, manual, videos.
- 2) Good improvement in memory
- 3) Could perform without errors with help of videos.
- 4) Involvement and participation was improved
- 5) Improvement in ability to demonstrate knowledge and understanding
- 6) Understand importance of teamwork and effective communication.

Assessment Tools & Rubrics:

(Total marks-30)

Attendance, Expression/Reflection	Excellent Expression skills and reflection of Knowledge (10)	Very Good Expression skills and reflection of Knowledge (9)	Satisfactory Expression skillsand reflection of Knowledge (7)	Poor Expression skills and reflection of Knowledge (5)	10 marks
Knowledge level, topic coverage	Excellent Knowledge level and full coverage of topic (10)	Well Knowledge level and adequate coverageof topic (9)	Satisfactory Knowledge level and coverage of topic (7)	Poor Knowledge level and coverage oftopic. (5)	10 marks
Performance (Presentation, Explanation, Communication)	Excellent (10)	Good (9)	Satisfactory (7)	Poor (5)	10marks

Course Outcomes:

CO1:	Determine different engineering properties of soil.
CO2:	Identify and classify soils based on standard geotechnical engineering practices

Pos:

PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PSOs:

PSO3	Able to conduct quality research work for benefit of society.
------	---

Evidence-Activity Photographs



