

## **Innovative Teaching and Learning methods**

The Civil Engineering department employs the teaching methods outlined below.

### **Videos and Animations**

Educational animations are created specifically to enhance learning. These animations are linked to educational technology as they assist in teaching and learning by utilizing technological tools to promote learning and boost performance. Incorporating videos into education is advantageous for both teachers and students. Videos and animations can aid students in visualizing the lessons and better processing the information, while also allowing teachers to concentrate on delivering quality content. In addition to developing listening skills, videos can engage cognitive functions such as thinking, reasoning, problem-solving, decision-making, and creativity.

### **Demonstration with models and software's**

Demonstration often occurs when students have a hard time connecting theories to actual practice or when students are unable to understand applications of theories. Models and charts are used for subjects like Engineering Geology, Water supply Engineering, Structural analysis, Foundation Engineering and Irrigation Engineering. Software models are used for CAD of Building structures, Rivett Models and ArcGis.

### **quiz**

A quiz is a brief and informal evaluation of a student's understanding. Quizzes are frequently utilized in higher education settings to quickly assess a student's grasp of course content, giving instructors valuable information about student development and any areas where knowledge may be lacking. A quiz typically consists of a short evaluation format, which can include multiple choice questions, fill-in-the-blank items, true or false questions, and short response answers. This kind of assessment is primarily employed to evaluate students' conceptual understanding on a daily basis.

### **Flipped Classroom**

Learners engage with instructional content, like watching a lecture online, before discussing the material in class. The goal is for students to examine the content in advance, referred to as first-exposure learning, allowing them to grasp the concepts at a pace that suits them. This approach enables students to concentrate more on class participation and obtain feedback on their efforts throughout the lesson.

### **Jigsaw**

Every student in a "home" group focuses on a specific aspect of a subject. They then gather with peers from different groups who are studying the same aspect, and once they have grasped the material, they return to their "home" group to teach it to their fellow members.

This educational approach aids in:

- Enhancing understanding.
- Fostering collaboration among students.
- Developing listening, communication, and problem-solving abilities.

### **Role-play**

It is a highly adaptable teaching method since it does not require any specific tools, technology, or special environments. For instance, students can engage in a role-play activity just as successfully in a lecture hall as they can in a seminar room. This technique enables students to navigate realistic scenarios by interacting with others in a controlled manner, allowing them to gain experience and test various strategies within a supportive setting. Role play is primarily utilized for subjects related to management, such as Professional Ethics and construction Project Management.

### **Viva**

Viva is an evaluation method to measure the emotional and interpersonal skills of students. It is carried out through verbal communication rather than written format, and it is evaluated immediately. This assessment allows for a thorough examination of a student's understanding of a specific topic and is effective for evaluating knowledge in all technical disciplines. Viva enables students to respond to straightforward questions, making it one of the most reliable methods for showcasing the attainment of the desired learning outcomes. Viva acts as a forum for students to exhibit their capacity for reflection, synthesis, and critical thinking.

### **Seminar**

This is a teaching method that creates an environment for a group to engage in guided discussions with one another on a specific topic presented by one or more participants. This method is applicable to topics relating to management or environmental concepts.

### **Project Based Learning**

Project Based Learning involves students engaging in a project for an extended duration on ODD Saturdays, where they tackle a real-world issue or respond to a complex inquiry. They showcase their understanding and abilities by producing a public product or presentation intended for a genuine audience. Consequently, students gain profound content expertise along with skills in critical thinking, teamwork, creativity, and communication. Project Based Learning fosters an infectious, creative enthusiasm among both students and educators.