

Flipped Classroom

A flipped classroom is an innovative teaching model that inverts the traditional approach to learning. Instead of delivering content in class and assigning practice at home, students engage with the material (e.g., watching videos, reading) before class and then participate in interactive activities, problem-solving, and discussions during class time. This allows for more personalized learning and deeper engagement with the subject matter. Students are first introduced to the learning material before class. This material is then used to deepen their understanding through discussions with peers and problem-solving activities facilitated by teachers.



Procedural Implementation of Flipped Classroom

1. Purpose

Flipped Classroom is implemented to shift traditional lecture-based learning to a student-centered learning approach, where students gain preliminary knowledge outside the classroom and engage in active learning, problem solving, and discussion during class hours. This approach supports Outcome Based Education (OBE) and enhances higher-order thinking skills.

2. Scope

This procedure is applicable to:

- Undergraduate and Postgraduate programs
- Theory and selected laboratory courses
- Core and elective subjects

3. Responsibilities

- **Head of the Department (HoD):** Approval, monitoring, and support
- **Course Coordinator:** Planning, CO alignment, documentation
- **Faculty Member:** Content preparation, facilitation, assessment
- **Students:** Pre-class preparation, in-class participation, feedback

4. Procedural Steps

Step 1: Identification of Topics

- Identify suitable topics that require:
 - Conceptual understanding
 - Problem solving and application
 - Analytical discussion
- Align selected topics with Course Outcomes (COs) and Program Outcomes (POs/PSOs)

Step 2: Preparation of Learning Materials

Faculty prepares pre-class learning resources such as:

- Video lectures
- PPTs with voice explanation
- Reading materials / e-content
- Problem sheets or case studies

Materials are uploaded to LMS / Google Classroom in advance.

Step 3: Pre-Class Learning by Students

- Students study the provided materials before class
- Students note doubts and attempt assigned questions
- Completion of pre-class activity is monitored through:
 - Online quiz
 - Assignment submission
 - LMS activity log

Step 4: In-Class Active Learning

Classroom time is utilized for:

- Discussion and doubt clarification
- Problem solving
- Group activities
- Case study analysis
- Peer instruction

Faculty acts as a facilitator rather than a lecturer.

Step 5: Student Engagement

- Students actively participate in:
 - Discussions
 - Group problem solving
 - Presentation of solutions
- Attendance and participation are recorded

Step 6: Assessment and Evaluation

Student learning is assessed using:

- Short quizzes
- Worksheets
- Assignments
- Viva / oral questioning

Assessment is mapped to relevant Course Outcomes.

Step 7: CO Attainment Analysis

- Student performance data is analyzed
- Contribution of flipped classroom to CO attainment is evaluated