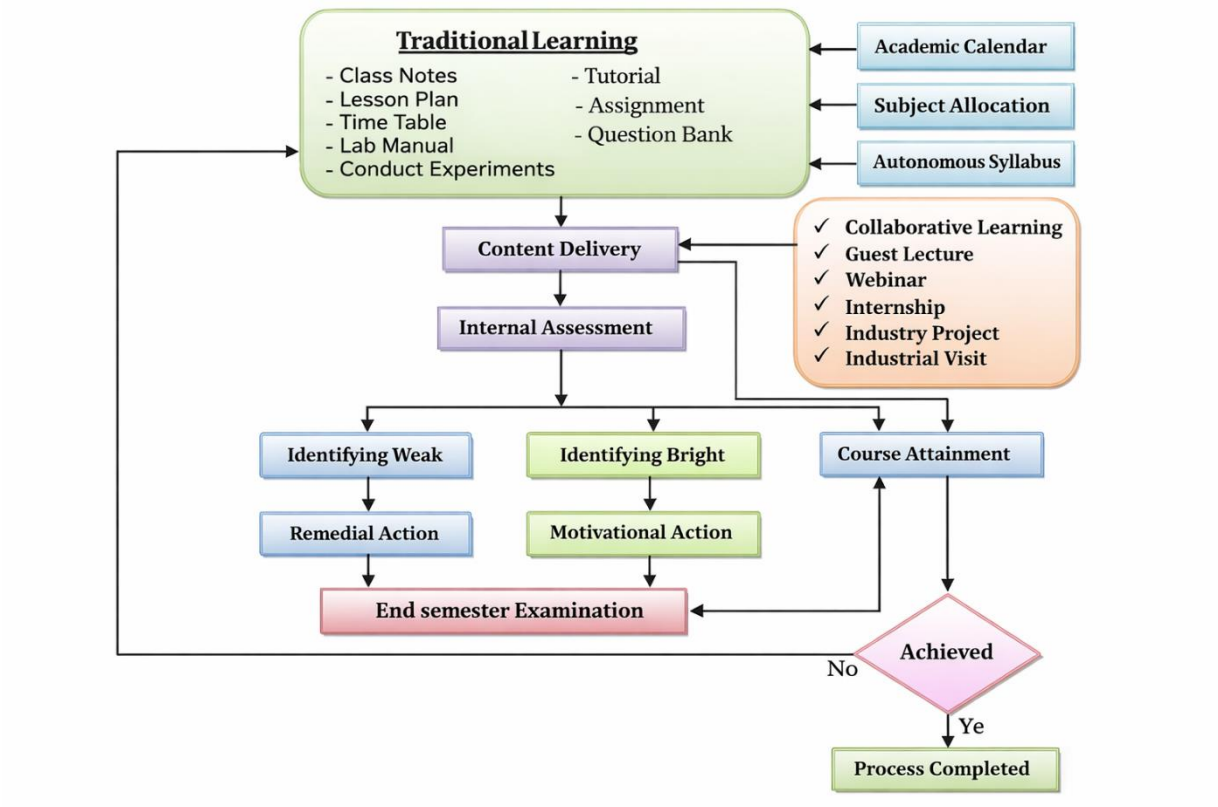
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)

Department of CSE (Artificial Intelligence)

Quality improvement in teaching and learning is achieved through a well-defined system of an academic components and procedures which are explained as follows:



The teaching-learning process plays a vital role in helping CSE (Artificial Intelligence) students understand and apply core concepts such as Artificial Intelligence, Machine Learning, Deep Learning, Data Science, Natural Language Processing, Computer Vision, and Intelligent Systems. These subjects involve complex algorithms, mathematical models, data-driven decision-making, and real-world problem-solving. Students often find it challenging to visualize abstract concepts,

understand algorithmic behaviour, and effectively apply theoretical knowledge to practical scenarios.

To enhance students' conceptual understanding, analytical thinking, programming proficiency, and problem-solving skills, the department adopts various innovative pedagogical practices that create an engaging and effective learning environment. The objective is to make learning more interactive, application-oriented, and aligned with current technological advancements and industry requirements.

Artificial Intelligence is a rapidly evolving domain that demands continuous learning and adaptation to emerging technologies. Therefore, effective pedagogical methods are essential for facilitating knowledge acquisition, skill development, and innovation among students. Faculty members employ the following teaching-learning methods to improve student engagement and learning outcomes:

- Chalk and White board
- Power point presentation
- Interactive learning
- Web Resources
- Seminars
- Quiz
- Industrial Visits
- MOOCs Courses -Swayam NPTEL, etc
- Project based learning
- Guest Lectures & Workshops
- JAM Session
- Paper presentations
- Tutorials
- Microsoft Teams/ Zoom Online Classes
- Experimental Learning
- Learning Management System (Moodle)
- Technical Training Programs through Training & Placement Cell (T&P)
- Case Study
- Flipped Learning
- Collaborative learning

Implementation

The teaching-learning process is implemented through various activities and innovative teaching methods to improve students' understanding, participation, and learning outcomes. Some of the pedagogical practices adopted by the department are given below:

Chalk and White board:

It is an effective and traditional teaching method used for delivering a substantial amount of information to students in a structured manner. It helps faculty members present and summarize concepts from various sources while facilitating better understanding of the subject. The faculty also encourages students to explore the topics further through self-learning and additional resources, thereby enhancing their knowledge and interest in the subject.



Chalk & Talk

Power point presentation:

It is an effective pedagogical method for presenting and reviewing course concepts in a structured manner. Students are encouraged to prepare and deliver presentations on selected topics, which helps them revisit previously learned concepts and strengthen their understanding. This approach enhances communication, technical presentation, and critical thinking skills while promoting active participation and collaborative learning. Faculty members provide guidance and summarize key points to ensure effective knowledge sharing among all students.



Power Point Presentation

Interactive learning:

It is an effective teaching method that supplements classroom lectures through discussions and interactive sessions. It provides opportunities for active student participation and encourages students to share their ideas and understanding of the subject. Faculty members identify advanced topics and organize interactive sessions to enhance students' conceptual knowledge and learning experience.



Interactive Learning

Web Resources:

Web resources are online tools and materials such as educational websites, digital libraries, online courses, virtual labs, and Learning Management Systems (LMS) that support teaching and learning. They provide easy access to updated information, reference materials, and subject content anytime and anywhere. Web resources help students understand concepts better, improve self-learning, and support faculty in delivering effective teaching with modern and interactive methods.

Seminars:

It is an effective learning activity arranged to enhance the technical presentation, communication, and knowledge-sharing skills of students. Seminar topics are carefully selected to complement classroom lectures and help students gain a deeper understanding of the subject. Through seminar presentations, students are encouraged to discuss course-related topics in detail with their peers and faculty members. This approach promotes active learning, enables students to learn new ideas and perspectives from others, and helps in clarifying complex concepts through discussion and interaction.

Benefits:

- Learn novel approaches and ideas from peers.
- Clarify complex concepts through discussion and interaction.



Seminars

Quiz:

It is an effective assessment tool used to periodically evaluate students' understanding of the concepts covered in the course. Quizzes are conducted in both online and offline modes to facilitate quick assessment and immediate feedback. The performance of students is recorded and analyzed to monitor their learning progress, identify knowledge gaps, and enhance their conceptual understanding of the subject.



Quiz

Industrial Visit:

Industrial visits are an important part of the teaching-learning process that provide students with exposure to real-world industrial environments. They offer an opportunity to understand the practical applications of theoretical concepts through interaction with industry professionals and observation of industrial processes and practices. This helps bridge the gap between classroom learning and industry requirements.



Industrial Visit

National Program on Technology Enhanced Learning (NPTEL)

The National Programme on Technology Enhanced Learning (NPTEL) provides e-learning through online web and video courses in Engineering, Science, Management, Humanities, and emerging technologies. The mission of NPTEL is to enhance the quality of education by providing free online course content developed by experts from premier institutions. More information is available at https://www.nptel.ac.in.

SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) is an initiative that provides opportunities for lifelong learning through a wide range of online courses. Students can choose from various courses offered by leading institutions and learn at their own pace through a virtual platform. The credits earned through eligible courses can be transferred to their academic records as per the applicable regulations. More information is available at https://www.swayam.gov.in.



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

THULLIBILLI PRASANTH KUMAR

for successfully completing the course

The Joy of Computing using Python

with a consolidated score of **54** %

Online Assignments	24.47/25	Proctored Exam	30/75

Total number of candidates certified in this course: **12432**

Devendra Jalihal

Prof. Devendra Jalihal
Chairperson,
Centre for Outreach and Digital Education, IITM

Jan-Apr 2024
(12 week course)

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras

Indian Institute of Technology Madras

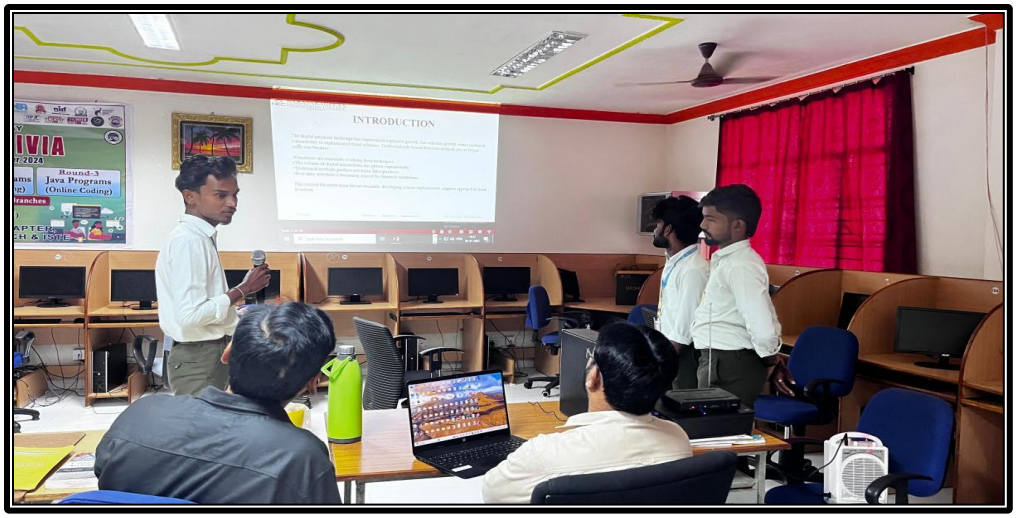
FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

Roll No: NPTEL24CS57S563400512 To verify the certificate No. of credits recommended: 3 or 4

NPTEL Sample Certificate

Project based learning:

- Students are encouraged to undertake mini-projects to improve their hands-on experience and presentation skills.
- Students in each section are divided into batches consisting of 3–5 members.
- Each batch selects a faculty guide based on the faculty member's domain knowledge and research area.
- Problem identification is carried out through literature surveys and the study of existing solutions.
- Students analyze the identified problem and determine the constraints associated with it before proposing a solution.
- Students learn new concepts and technologies during project implementation through collaborative learning and interaction with their peers.



Project Based Learning

Guest Lectures & Workshops:

Guest lectures by experts from industry and academia are organized regularly to provide students with exposure to advanced concepts, current industry practices, and emerging technologies. These sessions help bridge the gap between the curriculum and industry requirements, thereby supporting the attainment of Program Outcomes (POs) and Program Specific Outcomes (PSOs).

Workshops are conducted to familiarize students with recent technological developments, research trends, and practical applications in the field of Computer Science and Artificial Intelligence. These activities enhance students' technical knowledge, encourage continuous learning, and promote professional development and lifelong learning.



Seminars and Workshops

JAM Session:

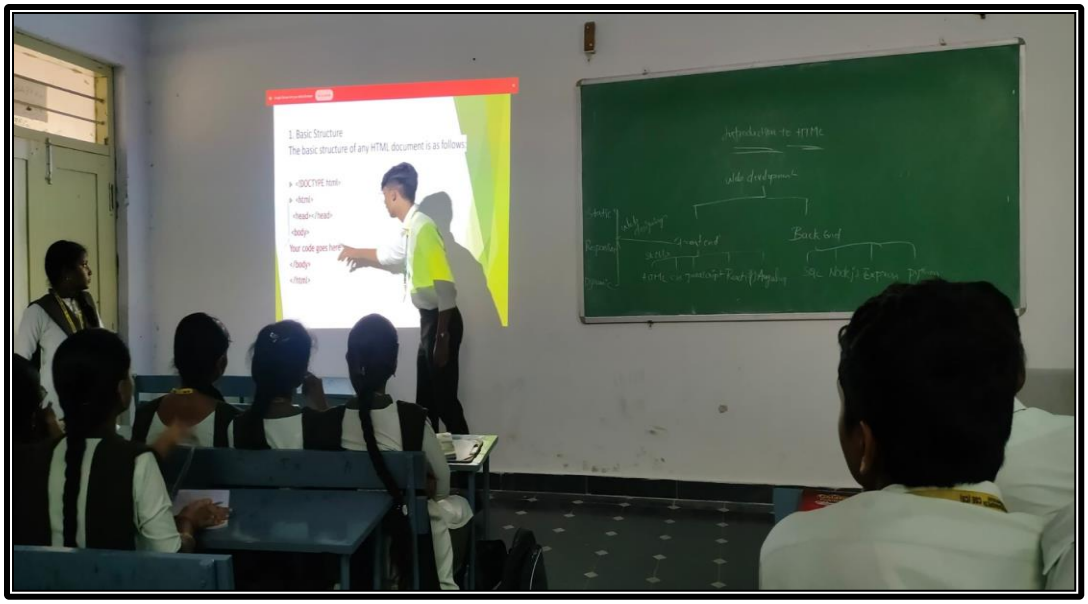
JAM (Just A Minute) sessions are conducted to improve students' communication, presentation, and time management skills. In these sessions, students are asked to speak on a given topic, theme, situation, or object for a limited duration. This activity encourages students to express their ideas confidently and concisely, thereby improving their fluency and accuracy in communication. JAM sessions also help students develop the ability to present information effectively during interviews, group discussions, and professional interactions.



JAM Sessions

Paper presentations:

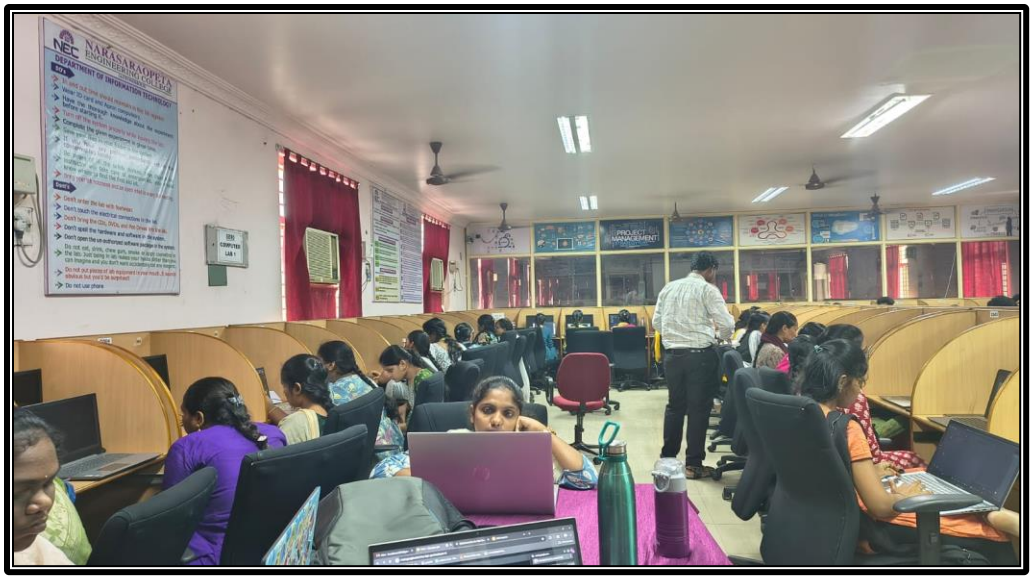
Paper presentation sessions are organized to encourage students to explore, analyze, and present technical topics related to Computer Science and Artificial Intelligence. These activities provide students with an opportunity to present their ideas, research findings, and innovative solutions before their peers and faculty members. Paper presentations enhance students' research aptitude, technical presentation skills, communication skills, and confidence while promoting knowledge sharing and awareness of emerging technologies and recent developments in the field.



Paper Presentation

Tutorial:

Tutorial classes are conducted to strengthen students' understanding of analytical and problem-oriented subjects. The class is divided into smaller groups to facilitate individual attention and effective interaction between faculty members and students. Special focus is given to students who require additional academic support. These sessions provide opportunities for solving problems, clarifying doubts, and improving analytical and critical thinking abilities. Tutorial classes help students enhance their problem-solving skills and improve their performance in continuous assessments and semester-end examinations.



Tutorials

Microsoft Teams/ Zoom Online Classes:

Microsoft Teams and Zoom are utilized to support the teaching-learning process through online and blended learning environments. These platforms enable faculty members to conduct live classes, share learning resources, and facilitate effective interaction with students. Faculty members can upload course plans, e-books, lecture notes, video lectures, assignments, and question banks, providing students with easy access to learning materials. These platforms are also used for conducting online assessments, quizzes, and other academic activities, thereby supporting continuous learning and student engagement.



Online classes through Microsoft Teams

Experimental learning:

- To enhance the quality of learning, laboratory courses are designed to reinforce the concepts taught in the corresponding theory courses.
- In each semester, laboratory courses are conducted to provide students with hands-on experience and practical exposure to the subject.
- The laboratories are equipped with the necessary hardware and software resources to facilitate the effective conduct of experiments.
- Faculty members guide and assist students during laboratory sessions to ensure proper understanding and execution of experiments.
- Detailed laboratory manuals are provided to help students understand the objectives, procedures, and expected outcomes of each experiment.
- Students are encouraged to study the relevant theory and experimental procedures before attending laboratory sessions.
- Students perform experiments, record observations, and analyze the results to strengthen their practical understanding of the concepts.
- Faculty members verify the observations and evaluate laboratory records as part of the continuous assessment process.
- Viva-voce examinations are conducted during laboratory sessions to assess students' conceptual understanding, practical knowledge, and learning outcomes.



Experiential Learning

Learning Management System (Moodle):

The institution encourages the use of the Learning Management System (Moodle) to support and enhance the teaching-learning process. Each department designates a Moodle Coordinator who maps students, courses, and faculty members at the beginning of every semester. Faculty members utilize Moodle to share lesson plans, course syllabi, study materials, e-books, assignments, laboratory manuals, and other learning resources with students. The platform is also used for conducting quizzes and other assessment activities, thereby facilitating continuous learning, effective course delivery, and student engagement.

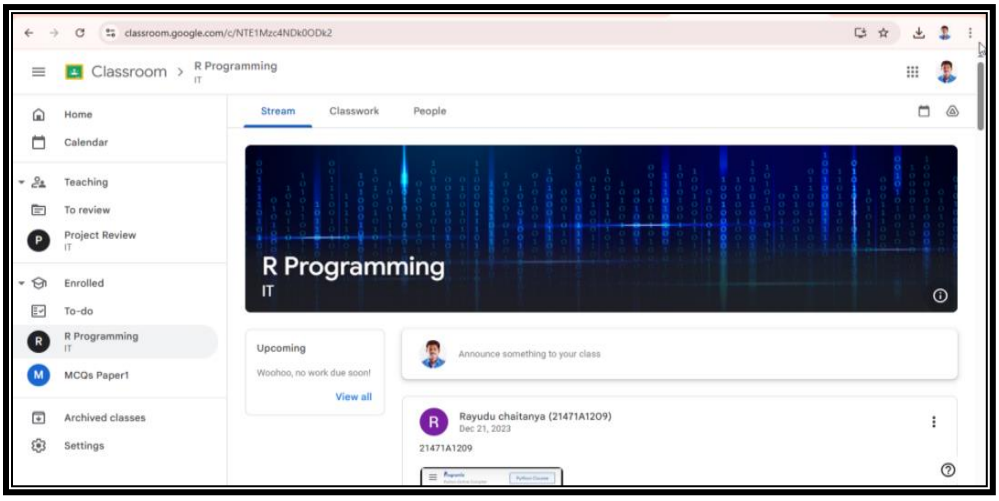
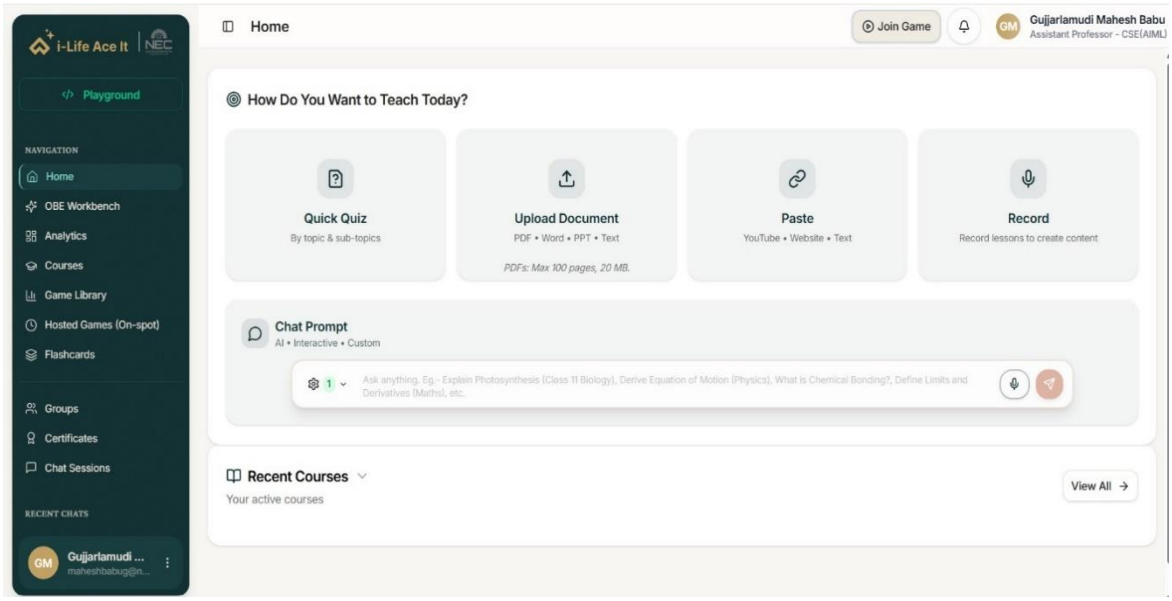


Fig 2.1.37 Moodle

AI-Powered Learning Management System (LMS):

The AI-Powered Learning Management System (LMS) is an intelligent platform that helps faculty and students enhance the teaching-learning process. Faculty can upload subject materials such as PDFs, PPTS, previous year question papers, etc. Based on the uploaded content, the AI generates short-answer questions, long-answer questions, model answers, and MCQ quizzes. The platform also includes an interactive Playground where students can practice programming experiments, write and execute code, validate solutions using test cases, and submit their programs. Additionally, students can access concept notes related to each experiment and take quizzes to strengthen their understanding of the subject. The LMS supports self-learning, continuous assessment, hands-on programming practice, and AI-assisted content generation, providing an effective and interactive learning environment for both faculty and students.


i-Life Ace It
NEC
Playground
NAVIGATION
Home
OBE Workbench
Analytics
Courses
Game Library
Hosted Games (On-spot)
Flashcards
Groups
Certificates
Chat Sessions
RECENT CHATS
Gujjarlamudi ...
maheshbabug@n...
Home
Join Game
GM
Gujjarlamudi Mahesh Babu
Assistant Professor - CSE(AIML)
How Do You Want to Teach Today?
Quick Quiz
By topic & sub-topics
Upload Document
PDF • Word • PPT • Text
PDFs: Max 100 pages, 20 MB.
Paste
YouTube • Website • Text
Record
Record lessons to create content
Chat Prompt
AI • Interactive • Custom
Ask anything. Eg.- Explain Photosynthesis (Class 11 Biology), Derive Equation of Motion (Physics), What is Chemical Bonding?, Define Limits and Derivatives (Maths), etc.
Recent Courses
Your active courses
View All

AI-LMS

Technical Training Programmes through Training & Placement Cell:

- Technical training is provided to strengthen students' fundamental knowledge, which supports placement and recruitment activities.
- The Training & Placement Cell organizes regular training sessions focused on soft skills, communication skills, aptitude, and technical competency development.
- These training programmes enhance students' employability skills and prepare them for recruitment processes such as written tests, group discussions, and interviews, thereby improving their placement opportunities.



Technical Training

Case Study:

A case study is a detailed analysis of a real-life situation, problem, or event used as a learning method in education. It helps students understand practical applications of theoretical concepts by examining how problems are identified, analyzed, and solved in real scenarios. Case studies improve critical thinking, decision-making, and problem-solving skills by encouraging students to study different possible solutions and their outcomes.

Flipped learning:

Flipped learning is a teaching method where students first study the lesson content at home using videos, notes, or online materials, and then use classroom time for discussions, problem-solving,

and activities. This approach helps students learn at their own pace and allows teachers to focus more on clarifying doubts and improving understanding through interactive learning in class.



Flipped Learning

Collaborative learning:

It involves encouraging student collaboration in projects and various academic activities. This approach helps students learn from one another and develop essential skills such as teamwork, technical competency, communication, and leadership. Through participation in professional activities and project work, students gain exposure to new technologies and enhance their overall learning experience.



Collaborative Learning

- Students acquire various skills such as technical skills, communication skills, and teamwork skills through organizing and participating in professional activities.
- Students gain exposure to and learn new technologies during project implementation and collaborative activities.