B-27, Knowledge Park – III, Greater Noida, Uttar Pradesh - 201308
Approved by: All India Council for Technical Education (AICTE), New Delhi
Affiliated to: Dr. A. P. J. Abdul Kalam Technical University (AKTU), Lucknow

Name of the Subject: Design and Analysis of Algorithm

Faculty Name: Dr. Mahesh Kumar Singh

Innovation Practices: Fish Bowl

Students Involved: 5th Semester

The **Fishbowl teaching method** is an interactive, collaborative approach where a group of students engages in problem-solving or discussion, while others observe and provide feedback. For **Design and Analysis of Algorithms (DAA)**, this method facilitates a deeper understanding of algorithm design techniques, performance analysis, and problem-solving strategies by combining active participation and reflective observation.

Steps to Implement the Fishbowl Method for DAA:

1. Faculty member select a specific topic (e.g Dynamic Programming, or Greedy Algorithms, Time and space complexity using Big-O notation Knapsack Problem, Matrix Chain Multiplication).
2. After selecting the topic faculty member develop a real-world or theoretical problem related to the topic.
3. Divide the classroom in 2 groups' **inner circle** (active participants) and an **outer circle** (observers).
4. Students in the inner circle discuss the assigned problem.
5. Students in the outer circle observe the inner circle discussion and analyze their approach.

By using the Fishbowl teaching method, faculty members teaching **Design and Analysis of Algorithms** create a dynamic learning environment that emphasizes interaction, collaboration,

and critical thinking. This approach allows students to engage deeply with algorithm design, learn from peers, and develop skills necessary for tackling complex computational problems.