**Innovation in teaching learning process**

**[1] Name of the Innovation activity: Case study related to the factors that should be considered during the selection of an appropriate Non-conventional machining process for a given job.**

**[2] Course code and course name: 1MEPE307 Advanced Manufacturing Tehnology**

**[3] Program and Class: Mechanical Engineering, T.Y. B.Tech**

**[4] Name of Faculty: Mr. V.S.Gondkar**

**[5] Introduction:** Advanced manufacturing is the use of innovative technology to improve products or processes with modern technology. Advanced manufacturing industries increasingly integrate new innovative technologies in both products and processes. The rate of technology adoption and the ability to use that technology to remain competitive and add value to define the advanced manufacturing sector. World Class Manufacturing (WCM) integrates the latest-generation machinery with process/work systems.

The Advanced Manufacturing entity makes extensive use of computer, high precision, and information technologies integrated with a high-performance workforce in a production system capable of furnishing a heterogeneous mix of products in small or large volumes with both the efficiency of [mass production](https://en.wikipedia.org/wiki/Mass_production) and the flexibility of custom manufacturing in order to respond quickly to customer demands " (Quoted in PCAST). In foreseeable future categorical developments facilitated with integration with computers will be largely impacted by the state of raw material and energy availability.

**[6] Motivation/Purpose of innovative technique**

* To bridge the gap between theoretical knowledge and real-world application.
* To provide students with valuable insights into system design, operation, and optimization strategies, fostering a deeper understanding of the challenges and opportunities

**[7] Procedure Followed**

Students prepare to analyze and present their case study with rigor and insight by delving into existing literature on the assigned topic, selecting three recent research papers, and gathering additional information for a comprehensive study. They explore academic journals, conference proceedings, and reputable sources to deepen their understanding through extensive literature review and information gathering.

**[8] Evaluation process followed**

* Knowledge of advanced manufacturing system used for a selected case study.
* Analyze the system and collected information thoroughly to prepare the case study report.
* Require students to present their case study analyses and proposed solutions to the class

**[9] Outcome**

1. By actively engaging with case studies, students have demonstrated the ability to apply theoretical concepts to practical scenarios, thereby enhancing student engagement, fostering deeper understanding of real-world applications, and improving critical thinking skills.

2. Students, through active engagement with case studies, have demonstrated their ability to apply theoretical concepts to practical scenarios, analyze complex problems in advanced manufacturing systems, and propose innovative solutions, thereby showcasing their proficiency in applying theoretical knowledge to real-world situations.

**Mode of conduct II: Case Study**

**Marks: 10**

**Instruction:**

With respect to the topic mentioned below (as per roll No.), students are advised to do the following.

1. Refer to any THREE recent research papers on this topic.

2. Read the papers and write the summary of the same in your words (not more than one page for one paper).

Topic of a case study: Write a case study upon the factors that should be considered during the selection of an appropriate Non-conventional machining process for a given job.