**Innovation in teaching learning process**

**[1] Name of the Innovation activity: Case study on industrial application**

**[2] Course code and course name: 1MEPC309 Refrigeration and Air Conditioning**

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

**[4] Name of Faculty: Mr. A. R. Mane**

**[5] Introduction:**

Refrigeration and Air Conditioning (RAC) systems are essential for diverse sectors, from food preservation to environmental control. Integrating case studies into RAC education offers students practical insights into system design, operation, and optimization. Through collaborative analysis and problem-based learning, students develop critical thinking skills and technical proficiency. Industry partnerships and interactive platforms enhance learning, preparing students to address real-world challenges in RAC applications. Case studies empower students to become competent practitioners and innovators in the field of Refrigeration and Air Conditioning.

**[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 delve into existing literature on the assigned topic, selecting two recent research papers and gathering additional information for a comprehensive case study. They explore academic journals, conference proceedings, and reputable sources to deepen their understanding. Through extensive literature review and information gathering, students prepare to analyze and present their case study with rigor and insight.

**[8] Evaluation process followed**

* Knowledge of refrigeration 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. Enhanced student engagement, deeper understanding of real-world applications, and improved critical thinking skills.

2. Students have demonstrated the ability to apply theoretical concepts to practical scenarios, analyze complex problems in RAC systems, and propose innovative solutions. By actively engaging with case studies.

**Mode of conduct II: Case Study**

**Marks: 10**

**Instruction:**

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

1. Refer to any TWO 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).

3. The last date to submit the hardcopy: 22nd Feb. 2023

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| **Roll No.** | | | | | | **Topic for case study** |
| 301 | 311 | 321 | 331 | 341 | 351 | Refrigeration used in Meat industry |
| 302 | 312 | 322 | 332 | 342 | 352 | Refrigeration used in pharmaceutical company |
| 303 | 313 | 323 | 333 | 343 | 353 | Multi pressure system |
| 304 | 314 | 324 | 334 | 344 | 354 | Refrigeration used in Diary industry |
| 305 | 315 | 325 | 335 | 345 | 355 | Refrigeration used in process industry |
| 306 | 316 | 326 | 336 | 346 | 356 | Cryogenic engineering: Liquid Oxygen generation plant |
| 307 | 317 | 327 | 337 | 347 |  | Refrigeration used in blood bank |
| 308 | 318 | 328 | 338 | 348 |  | Refrigeration used in cold storage |
| 309 | 319 | 329 | 339 | 349 |  | Cascade refrigeration system (two stage) |
| 310 | 320 | 330 | 330 | 340 |  | Refrigeration used in vaccine storage |