# **DEVELOPMENT OF THE PIPING DESIGN AND ENGINEERING WITH AUTOPIPE SOFTWARE APPLICATION COURSE FOR MECHANICAL ENGINEERING STUDENT OF MAPÚA UNIVERSITY**

**Abstract**

Piping design and stress analysis are essential to industrial processes, and mechanical engineering education demands a strong grasp of these concepts. Traditional teaching approaches rarely give students enough hands-on experience. The piping design and engineering using AutoPIPE software program course addresses this gap by allowing students to design piping systems, run simulations, and complete jobs virtually. Students get a well-rounded education with industry-standard software, a planned syllabus, and practical exercises. The instruments used in this study were AutoPIPE software and surveymonkey. This research aimed to develop the course using A.D.D.I.E (analyze, design the curriculum, develop the curriculum, implement and evaluate), AutoPIPE software usage, and the overall learning experience by conducting surveys. Pre and post surveys indicated that students using the course materials improved their skills in simulating, designing, and analyzing pipe stress scenarios. Additionally, students found the training highly relevant to real-world engineering practices. Based on these results, it is recommended that future iterations of the course include additional simulation exercises and updates to course materials to reflect current industry trends. The course presents significant potential to enhance mechanical engineering education by bridging the gap between theory and industry application.

Keywords: Piping Design, Pipe Stress Analysis, AutoPIPE trainer, Outcome based education, Mechanical Engineering Education