

Active Learning in Engineering Courses Using Excel Spreadsheet

Authors : Promotes Saha

Abstract : Recently, transportation engineering industry members at the study university showed concern that students lacked the skills needed to solve real-world engineering problems using spreadsheet data analysis. In response to the concerns shown by industry members, this study investigated how to engage students in a better way by incorporating spreadsheet analysis during class - also, help them learn the course topics. Helping students link theoretical knowledge to real-world problems can be a challenge. In this effort, in-class activities and worksheets were redesigned to integrate with Excel to solve example problems using built-in tools including cell referencing, equations, data analysis tool pack, solver tool, conditional formatting, charts, etc. The effectiveness of this technique was investigated using students' evaluations of the course, enrollment data, and students' comments. Based on the data of those criteria, it is evident that the spreadsheet activities may increase student learning.

Keywords : civil, engineering, active learning, transportation

Conference Title : ICEBEMCES 2022 : International Conference on Evidence-Based Education Models and Computerized Educational Systems

Conference Location : New York, United States

Conference Dates : January 28-29, 2022