

A Three-Year Improvement Assessment of Project-Based Learning for an Antennas and Propagation Course [Education Corner]

Abstract

Antennas and propagation constitute one of the compulsory courses for students in the communication engineering program at many universities. At Universiti Malaysia Perlis (Uni-MAP), a new project-based learning (PBL) approach has been implemented in the teaching and lab instruction of this class. Besides imparting the latest antenna technology in the form of textile antennas to the students, this hands-on approach has proved to increase students' interest and understanding of the main elements of the curriculum. PBL is applied during 14 weeks in the form of laboratory sessions. Through the first four weeks, basic antenna laboratory sessions are conducted to introduce students to the principles of antennas and their design, fabrication, and measurement procedures. Moreover, students are then required to fabricate their own unique antennas using textiles and manual tools available in the lab, a process that consumes less time compared to making antennas from normal printed circuit boards. An analysis of how well the course outcomes (COs) were achieved and the final results of the students was performed for three years. The conclusions indicate that, using PBL, student performance increased, with an average increment of 5% in the CO attainment.