

A Proposed Project-Based Research Experience for Freshmen Engineering Students Using Flight Simulators

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Abstract: It has been an objective of engineering programs to provide freshmen engineering students with hands-on learning experiences. First-years courses are often criticized for offering little connection to engineering practice. While in some cases it might be argued that freshmen engineering students need an injection of theory to prepare them for courses later to come in the program, some institutions offer summer enrichment and retention-focused workshops to give a practical dimension to topics students encounter in first-year courses, or will encounter later on in the program. This paper will propose a design for a project-based two-weeks-long summer workshop. The proposed design for this workshop is an attempt to give freshmen students in industrial and systems engineering, engineering management, and related fields, a learning experience that covers a variety of topics such as simulators, human factors, experimental design, engineering statistics, technical writing, and oral presentations.

Keywords: Project-Based Learning, Retention in Engineering Education, Summer Engineering Workshops