New instructional tools for undergraduate mechanics: the purdue mechanics freeform classroom

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ABSTRACT

Motivated by the need to address the broad spectrum of learning styles embraced by today’s engineering students, a desire to encourage active, peer-to-peer, and self-learning, and the goal of interacting with every pupil despite ever-expanding enrollments, the Purdue Mechanics Freeform Classroom represents a new approach to engineering mechanics education. This complete, yet evolving, course system combines the most successful elements of the traditional classroom, with new hybrid texts, extensive multimedia features, and web2.0 interactive technologies, rendering physical and virtual learning environments. This approach has been shown to produce favorable educational outcomes, yielding a far-superior educational experience for the students and, in many ways, a more positive experience for the course instructor. With continued development and expansion, the developers believe that the Purdue Mechanics Freeform Classroom can be adopted at colleges and universities across the globe, rendering a positive and uniform mechanics education experience for all.