

Abstract Submitted
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Role of Preparatory Physics Foundation course in Student Success BINOD NAINABASTI, CRISTIAN BAHRIM, Department of Physics, Lamar University — For almost 15 years, the Department of Physics at Lamar offered each semester a preparatory physics course for building a stronger foundation for STEM students before they take calculus-based physics I. This Preparatory Physics Foundation (PPF) course allows our freshmen students who did not have enough high-school physics exposure to have a more robust conceptual understanding of physics and to develop the basic mathematical skills (including vector and graphic analysis, trigonometry) toward a successful completion of two calculus-based intro physics courses for science and engineering majors, which are part of the university core. Our statistics indicates that when students have completed the PPF course their drop/fail rate in calculus-based university Physics 1 and 2 is 15-20%, as compared with the previous generations that did not take this PPF course and had a drop rate of at least 30%. To increase even more the success rate of our students, our PPF course focuses on quality instruction by offering a plethora of physics demos to stimulate curiosity and encourage peer conversations about physics phenomena and focuses more on the enrichment of our students' mathematical skills for better understanding how mathematics is applied to physics problems, through graphical analysis and vector operations. Our educational focus is to offer a robust understanding of basic concepts of kinematics and dynamics of mechanical phenomena. This poster will present both quantitative and qualitative data analysis.

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