

# LEARNING MATHEMATICS IN A DIGITAL WORLD: INNOVATIONS AT TEXAS A&M UNIVERSITY

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## ***Presentation Summary (limited to 200 words)***

This presentation will explore novel initiatives adopted to teach mathematics, especially in the large service courses, and describe projects and products currently being developed to improve student's learning outcome and success. Through a comprehensive use of technology, leaders provide a holistic approach that starts with a university-wide Math Placement Exam (MPE) and utilizes data collected from a variety of sources to analyze student performance and generate personalized, real-time information and recommendations to help guide decisions across the student lifecycle. In partnership with publishers and utilizing online instructional systems, leaders have designed: 1) a variety of instruments to deliver content both online and in the classroom; 2) randomized online homework systems; 3) online "boot-camp" course packages to address measured deficiencies, utilizing adaptive learning technologies; and 4) hybrid/flipped courses aided by peer-led discussions. Currently, leaders are developing a sophisticated calculus instructional video game, jointly with the Viz Lab in the School of Architecture, to be used as a tool to improve the conceptual understanding of key calculus concepts. This game will be incorporated into a broader calculus-learning environment and a proof-of-concept will be tested this fall.