

327b Microelectromechanical Systems (Mems) - an Authentic Interdisciplinary Educational Experience

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Since 1999, a team of faculty from Mechanical, Electrical and Chemical Engineering from Tennessee Technological University (TTU) have been offering a course called “Introduction to Microelectromechanical Systems.” Microelectromechanical Systems (MEMS) are a relatively recent, yet wide spread, and rapidly growing technology finding a diverse array of applications. The design, fabrication and characterization of new devices continues to be of great interest in both the academic and industrial sectors with a growing need for graduates at both the BS and advanced degree levels. The integration of mechanical, electrical and chemically active devices on micrometer scales requires a unique skill set that is particularly amenable to interdisciplinary teaming. The senior-level undergraduate/lower-level graduate elective has become a favorite among TTU engineering majors from the three fields. This past year, elements of entrepreneurship were added to the course when the TTU faculty teamed with Marketing professors from Vanderbilt University. The exciting new environment offers an authentic interdisciplinary design environment that aspires to be a model for other similar activities.