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The Department of Mathematical Sciences at USMA is restructuring its advanced mathematics sequence with the goal of increasing student retention, motivation, and success in their Mathematics, Science, and Engineering (MSE) studies. The Advanced Mathematics Program is a two-semester advanced mathematics sequence for selected freshmen who have validated single variable calculus and demonstrated strength in the mathematical sciences. Students enrolled in the program are exposed to topics beyond the regular core mathematics courses at USMA. Additionally, they complete a structured technical writing program and enjoy interdisciplinary lecturers from a variety of MSE fields and outside agencies. As a result of the program, the majority of these students go on to select a MSE major. In this presentation, we will discuss our initiative to further enhance our students' experience by building on their recent successes in learning the concepts and skills of differentiation and integration in a multivariable environment. (Received September 17, 2007)