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Using Online Mathematics Modules for Physical Chemistry Students. Preliminary report.

Among chemistry majors, the physical chemistry course is one of the most challenging as determined by grades and pass rates. Much of this difficulty is likely due to the amount and difficulty of the mathematics required for the course. While the prerequisites for physical chemistry courses are usually two semesters of calculus, they often use differential equations, partial derivatives, triple integrals, and linear operators on infinite dimensional vector spaces. In a partnership between the Departments of Chemistry and Mathematics, a series of online modules have been developed to help the physical chemistry students to review the mathematics from the first two semesters of calculus, and to help teach the mathematics as needed throughout the remainder of the semester. In this presentation, we will discuss the successes and difficulties in creating and implementing these modules as well as plans for future research and broader implementation. (Received June 16, 2010)