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Cheyne J Miller* (cmiller5@sjcny.edu), Dept Of Mathematics and Computer Science, St. Joseph's College, 155 W. Roe Blvd., Patchogue, NY 11772. *From Linear Algebra to Cech Cohomology in one Undergraduate Semester*. Preliminary report.

This paper will discuss how an undergraduate linear algebra syllabus can comfortably fit *Cech Cohomology* calculations and subsequent discussions surrounding modern applied topology. The author's experiences are based off of two semesters of successful implementation at a liberal arts college. We will assume that by the end of the semester, the student knows how to compute the rank of a matrix and understands how to apply the *Rank-Nullity Theorem*. With about three additional hours of lecture time, we will explain how the student can then efficiently and enthusiastically learn how to compute the *Cech Cohomology* of various manifolds. While this computation is a great way for students to connect many different ideas and techniques they've learned throughout the semester, it also has a nice blend of geometry and algebra that was appreciated by the students. Moreover, this foray into applied topology allows the instructor to end the semester with a peek at *Persistent Homology*, a modern data analysis technique which would theoretically use these same calculations. (Received September 08, 2017)