Exposure to contemporary applications is an essential part of the student linear algebra experience and both justifies and motivates the study of more abstract principles. We describe a second linear algebra course, which introduces students to substantial applications they rarely encounter in the prerequisite. Among these are simple and multiple linear regression, principal component analysis, clustering (both k-means and spectral), and numerous singular value decomposition applications. Throughout this course students utilize real-world data sets in a Jupyter notebook environment. (Received September 12, 2019)