The use of chirped-pulse Fourier transform microwave (CP-FTMW) spectroscopy as a tool for training undergraduates will be discussed. Coker College’s inexpensive, versatile CP-FTMW spectrometer has been applied both in the undergraduate teaching laboratory and the undergraduate research laboratory. In both cases, the education of the students is a central priority of the project. The study of 3-iodopyridine, a project recently completed by Coker undergraduate students, will be discussed. Details of the Coker CP-FTMW spectrometer will also be presented.