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Increasing Communication and Problem-Solving Skills in a Liberal Arts Probability Course.

The liberal arts curriculum traditionally emphasizes the need for students to be strong, creative, critical thinkers able to convey ideas well both in written work and via oral communication. Meshing these notions with an upper level undergraduate mathematics course in probability while still ensuring coverage of many topics can be challenging. I will describe my attempts at avoiding the traditional lecture-based style of the course in order to improve student engagement and better meet these goals. My focus was on developing the course with students working together to solve problems during class sessions, writing their solutions individually using LaTeX, and working on individual research projects and group projects to further immerse themselves in the material and improve their communication skills. This type of course enables students to constantly work on tying these aspects of a liberal arts education with the challenge encountered with probability concepts such as Bayes' theorem, the central limit theorem, and multivariate distributions. (Received September 13, 2013)