Meeting: 1003, Atlanta, Georgia, MAA CP L1, MAA Session on Using Real-World Data to Illustrate Statistical Concepts, I

1003-L1-468 **Andrew Glen*** (aa1275@usma.edu), LTC Andrew Glen, Department of Mathematical Sciences, West Point, NY 10996. *Incorporating Notebook technology and data analysis into probability and statistics education at West Point.* Preliminary report.

We are continually challenged to improve our educational techniques and proceeds for many reasons, to include the advances of technology. At the United States Military Academy, the four semesters, required of all students, are designed to create competent, confident problem solvers capable of modeling and using technology effectively. The last semester is a course on data analysis, probability, and statistics. Presented here is our methodology for combining these areas into one semester, while taking advantage of the laptop technology that all our students have. We present what 'is' and what 'is not' in the curriculum and why we've chosen what to keep. We recognize that there is no easy answer on the design of such a course. We show what we've been doing for the past two years and give some insights on how well it seems to be working. Specifically we show how to model Empirical Distribution Functions with CDFs, then we cover calculus based probability theory on the CDFs. We incorporate the theory into elementary statistical inferential methods to include hypothesis testing, confidence intervals and simple linear regression. We highlight the use of Excel and Mathematica in our course. We also conduct research projects using Monte Carlo simulation for problem solving. (Received September 15, 2004)