Cornell University offers a 100-level cryptology course for non-majors entitled “The Art of Secret Writing”. For many students, this course represents their only exposure to college-level mathematics or computer science. In this talk, I will describe an approach to teaching this course that I developed in the spring of 2005. It centered around the development of mathematical concepts and computer literacy, with the first half of the semester devoted to computer-based decryption using Microsoft Excel. This culminated in a computer exam that I will demonstrate during the talk. (Received September 20, 2007)