Cryptology is a fascinating topic, with a perfect mix of pure theory and real life applications. For those reasons it is appealing to many undergraduate students, mostly of mathematics and computer science. The mathematical concepts are advance enough to satisfy advanced mathematics students, and the need for using computers in order to have "hands on" experience in the field suits computer science students. But computer science students do not necessarily have enough background in advanced mathematics. And mathematics students usually do not know much about programming. One of the challenges is to make the theoretical part of the course more accessible for non-mathematics majors, as well as making it possible for mathematics students to experiment with algorithms. In this talk, I will share my experience after having developed and taught a cryptology class for undergraduates. (Received September 20, 2007)