Mathematics majors can take SM362, Modern Algebra, and SM462, Algebraic Structures, which address the basic ideas behind modern encryption techniques.

In recent semesters, many mathematics majors have taken courses entitled Applied Algebra and Cryptanalysis, offered on an occasional basis, which deal directly with the mathematics of public key encryption.

Recent and coming events:

Math Club viewing of the movie Pi, January 24.
Math Jeopardy! contest, February 12.
Math Club careers night coming in February.

Midn. 1/c Benjamin Heineike is completing his Mathematics Trident Project on Reaction Diffusion Equations and Morphogenesis Using Galerkin Methods this semester. Midshipmen Philip Ely, Richard Linnell, Cole Muller, Andrew Privette, Eric Rittermann, and Tyler Tennille are all working on projects which will let them graduate with honors in mathematics.

Mathematical quotation:

[Mathematics can be extended to any branch of knowledge, including economics, provided the concepts are so clearly defined as to permit accurate symbolic representation. That is only another way of saying that in some branches of discourse it is desirable to know what you are talking about.] J. R. Newman, in The World of Mathematics, New York: Simon and Schuster, 1956.

Quick problem: A small circle lies inside a circle of radius 1, tangent to that circle and also tangent to (but outside) an equilateral triangle whose vertices are on the large circle. What’s the radius of the small circle?

Last issue’s problem:

Suppose ping pong balls numbered one to one million are in a (large) barrel. If you randomly pick out three balls, what’s the probability that the number on the third ball is between the numbers on the first two? If the numbers on the 3 balls are a, b, and c, with a < b < c, then you
could have picked them in 6 different but equally likely orders: abc, acb, bac, bca, cab, or cba. Since 2 of these have the middle number third, the probability is 2/6, or 1/3.

Visit the Mathematics Department web site at http://www.usna.edu/MathDept/website/index.htm