

1096-F1-2035 **Don Spickler*** (despickler@salisbury.edu), Henson Science Hall 132E, Salisbury University,
1101 Camden Ave., Salisbury, MD 21801. *Using Classical Cryptography and Cryptanalysis as an
Enrichment Exercise in a First Course in Linear Algebra.*

The Hill cipher is a block cipher that was developed by Lester Hill in 1929. Although it does not seem to have been used much at the time and by today's standards is not a secure cryptographic system it does provide a very nice application of matrix arithmetic, inversion, and the properties of linear transformations. Furthermore, it is accessible to beginning mathematics students and extends the classroom material, usually done over the real number system, to the modular case in a natural and concrete way. In this talk we will go through an enrichment exercise on the Hill cipher that is suitable for a beginning course in linear algebra. The calculations will be facilitated by the software package Linear ME (Maxima Edition), a linear algebra exploration tool developed by faculty and students at Salisbury University. (Received September 17, 2013)