

CMSC 442 Fall 2003
Homework 1

Due: Wednesday, September 10, 2003

- **READING ASSIGNMENT:** Peterson & Weldon, “**Error-Correcting Codes,**” MIT Press, (Second Edition), (1986), Chapters 1 & 2.
- **OPTIONAL READING ASSIGNMENT:** MacWilliams & Sloane, “**The Theory of Error-Correcting Codes,**” North-Holland (Second Edition), (1983), Chapter 1.

1. Prove that 10 has no multiplicative inverse mod 12.
2. Find the multiplicative inverse of 7 mod 15.
3. Construct the 16×16 multiplication table for $GF(2)[x] \bmod x^4 = 1 + x$