

# CMSC 442/653: Introduction to Coding Theory

## Tentative Syllabus

**Instructor:** Professor Samuel J. Lomonaco

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### Optional Text:

Error-Correcting Codes  
by W. Wesley Peterson and E.J. Weldon, Jr.  
MIT Press (1996)  
ISBN 0-262-16-039-0 (harcover)

### Course Topics:

- Overview of Coding Theory
- Finite (Galois) fields
- Linear Codes
- Polynomial Rings
- Cyclic Codes
- Linear Switching Circuits
- BCH Codes
- Convolutional Codes
- Quantum Error Correcting Codes (if time permits)

### Method of Evaluation:

Homework: 25% ; Exam 1: 25% ; Exam 2: 25%; Final Exam: 25%.

**All exams including the Final Exam will be with closed books, closed notes, and open mind.**

Late homework will not be accepted. Exams will be given only at the scheduled times. No make up exams. Exceptions to this policy may be made in cases of extreme hardship.

### Academic Conduct:

By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal.

To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook, the Faculty Handbook, or the UMBC Policies section of the UMBC Directory.