

Math 810

Spring Semester 2017
MWF 11:30–12:20
A303 Wells Hall

Error-Correcting Codes

J. Hall
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Office hours:
MWF 10:20-11:10
or by arrangement

There is no text for the course, but class notes (which include much of the material) are available on my web page:

<http://www.math.msu.edu/~jhall/classes/classes.html>

Grading:

- homework (roughly 70-80%)
- and a final exam (roughly 30-20%);
- the lecturer may decide to replace part of the homework or final by a project (or projects).

The course is designed for students in technical disciplines (mathematical sciences, physical sciences, engineering, etc.) who have basic knowledge of linear algebra. The more advanced algebra of finite fields and polynomial rings that is necessary will be provided or developed in class.

The course begins by introducing the basics of algebraic coding theory before moving on to specific topics of broad interest. This will include generalizations of Reed-Solomon codes with a decoding algorithm based on the Euclidean algorithm and codes with decoding algorithms based on graphs.

The selection of additional material and of possible projects will depend upon the make-up of the class and the time available.

Some important dates this semester:

Monday, 01/09/2017: Classes begin.

Friday, 01/13/2017: Online open add period ends at 8pm.

Monday, 01/16/2017: Martin Luther King, Jr., Day. No classes held; university is open.

Friday, 02/03/2017: End of 100% Tuition Refund.

Monday 03/06/2017 to Friday 03/10/2017: Spring Break.

Friday, 04/28/2017: Last day of classes.

Thursday, 05/04/2017, 10:00am-noon: Final Exam.