Essential Coding Theory (Harvard CS 229r, Fall 2023)

URL: https://madhu.seas.harvard.edu/courses/Fall2023

Course Description: This course introduces essential elements of the theory of error-correcting codes. Focuses on the basic results in the area, taught from first principles. Special focus will be given on results of asymptotic or algorithmic significance. Principal topics include:

1. Construction and existence results for error-correcting codes
2. Limitations on the combinatorial performance of error-correcting codes
3. Decoding algorithms
4. Applications to other areas of mathematics and computer science.

Instructor: **Madhu Sudan**

Course Style/Expectations in Brief: The course is very mathematical in nature and all information is captured in definitions/theorems/proofs. So a strong background in proof based courses is highly recommended.

Lecture attendance is mandatory in the course. Most of the learning happens through information disseminated in lectures and reinforced by problem sets.

To enroll in the course, you need instructor permission. So if you are interested in the course (1) Add the course to your crimson cart (2) Write an email to madhu (3) Submit PSet0. (See syllabus for more details.)

Other Information: Syllabus, Timetable + Materials.