

# 20SK – Signals and Codes

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## Lecture 13x – Cyclic, BCH, and Reed-Solomon codes (2016/01/08)

Topics discussed:

- Binary cyclic codes: systematic encoding, Maggit decoder, decoding a cyclic code.
- BCH codes: cyclic codes with given  $t$  and  $k$ .
- Reed-Solomon codes: non-binary cyclic codes.

The relevant literature is [1, chapters 3 and 4], [2, chapters 10 and 12] and [3, chapters 4 and 6].

### Resources

- [1] Morelos-Zaragoza, R. H.: The Art of Error-Correcting Coding. 2nd edition, John Wiley & Sons, 2006, 263pp.
- [2] Adámek, J: Foundations of Coding: Theory and Applications of Error-Correcting Codes with an Introduction to Cryptography and Information Theory. Wiley Interscience, 1991, 352 pp.
- [3] Moon, T. K.: Error Correction Coding – Mathematical Methods and Algorithms. Wiley Interscience, 2005, 756 pp.