

An introduction to coding theory

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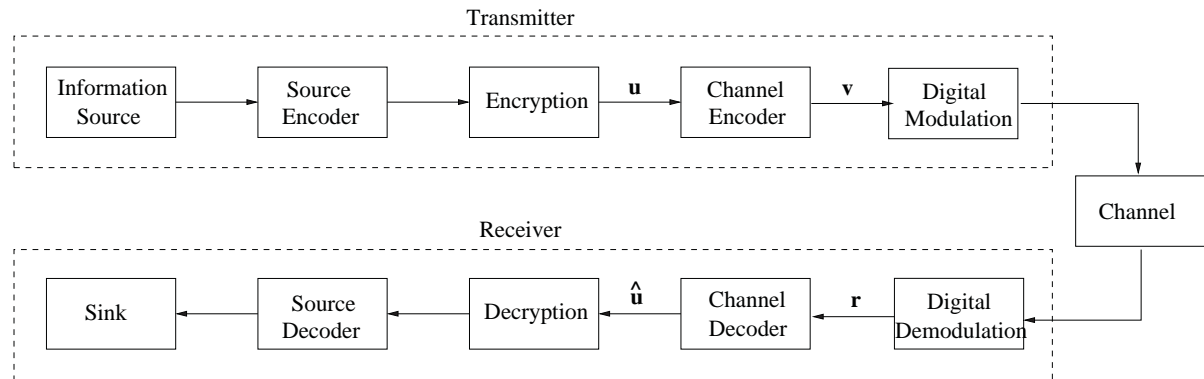
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Lecture #1B: Introduction to error control coding-II



Introduction



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- The output of the source encoder is referred to as the *information sequence*.



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- *Examples*: Data Encryption Standard (DES), RSA system.



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- The encoded sequence that is the output of the channel encoder is referred to as *codeword*.



Modulation

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- *Examples:* Phase shift keying (PSK), quadrature amplitude modulation (QAM).

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- *Examples:* Binary erasure channel (BEC), Binary symmetric channel (BSC).

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- Soft demodulation has significant improvement over hard demodulation.

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- The coded sequences can be broken up into blocks of data *frames*. A frame error occurs if any information bit in that data frame is in error. The decoded FER is the percentage of frames in error.



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- It is in the key that the security of a modern cipher lies, not in the details of the cipher.



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- Due to channel errors, the final reconstructed signal may be distorted.