

PE Course: Signal Processing

<http://www.cs.aau.dk/~yang/course/filter08.htm>

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Summary

1 Textbook

Alan V. Oppenheim, Ronald W. Schaffer, and John R. Buck: "*Discrete-Time Signal Processing (Second Edition)*", Prentice Hall, 1999.

2 Course Webpage

<http://www.cs.aau.dk/~yang/course/filter08.htm>

3 Planned Content

- **MM1:** Introduction to digital filter techniques
 - Filtering examples
 - Review of discrete-time processes and systems
 - Frequency responses of LTI systems
- **MM2:** Synthesis of IIR discrete-time filters
 - Synthesis of continuous-time filters
 - Impulse-invariance method
 - Bilinear transformation method
- **MM3:** Algebraic transformation of LP IIR filters and Linear phase systems
 - Algebraic transformation of LP IIR filters
 - Linear phase systems
- **MM4:** Synthesis of FIR by Windowing
 - Window methods
 - Frequency response (Pole-Zero Diagram)
- **MM5:** Implementation of digital filters
 - Block diagram and signal flow graph
 - Structures of IIR and FIR systems
 - Round-off noise in digital filters