

Vak: Digital Signal Processing

credits: 5

Vakcode ELVH19ADSP
Naam Digital Signal Processing
Studiejaar 2020-2021
ECTS credits 5
Taal Engels
Coördinator T.W. Scholten

Werkvormen Hoorcollege
Opdracht
Practicum / Training
Toetsen Digital Signal Processing - Schriftelijk, eigen organisatie

Leeruitkomsten

The student can :

- find the real or complex Fourier series representation of a periodic function;
- describe the frequency and amplitude characteristics of the different harmonic components of a function;
- calculate and apply Discrete Fourier transform;
- perform calculations with discrete impulse responses, discrete convolution products and frequency responses;
- apply sampling theorem of Shannon, Nyquist frequency and the concept of aliasing;
- identify if a system is stable, linear, causal and/or time invariant;
- calculate and apply the z-transform and know the relation with the Fourier transform;
- conduct stability analysis in the z-plane and in the frequency domain using poles & zeroes and the unit circle;
- calculate the transient behaviour of a discrete system;
- design and classify different forms of digital filters (FIR, IIR notch and low/high pass filters) with given properties and demonstrate this filter;
- calculate the difference equation for filters with given properties.

Inhoud

This study unit consists of tutorials, practicals and theory lectures.

Opgenomen in opleiding(en)

Elektrotechniek Major Sensor Technology

School(s)

Instituut voor Engineering

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