Vak: Digital Signal Processing — credits: 5

Vakcode	ELVH19ADSP
Naam	Digital Signal Processing
Studiejaar	2022-2023
ECTS credits	5
Taal	Engels
Coördinator	J. Zijlstra
Werkvormen	Hoorcollege Opdracht Practicum / Training
Toetsen	Digital Signal Processing - Schriftelijk, organisatie ToetsCentrum

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

share your talent. move the world.

De ECTS onderwijscatalogus van de Hanzehogeschool Groningen wordt met de grootst mogelijke zorg samengesteld. Het is echter mogelijk dat de inhoud van de catalogus -en de daarin vervatte informatie- verouderd, incompleet of onjuist is. Aan de inhoud van de catalogus kunnen dan ook geen rechten worden ontleend.