



T-306-MERK

MERKI OG KERFI (enska: SIGNALS AND SYSTEMS)

6 ECTS

Ár:	2. ár / 3. ár.
Önn:	Vorönn.
Stig námskeiðs:	2. Grunnám, framhaldsnámskeið.
Tegund námskeiðs:	Skyldunámskeið á 2. ári HEV. Skyldunámskeið á 3. ári HÁV, RAV.
Nauðsynlegir undanfarar:	Greining rása (T-306-RAS1), Stærðfræði III (T-301-MATH) Grunnþekking í forritun (Matlab og/eða Python).
Skipulag:	Kennt í 12 vikur – 6 kennslustundir í viku. dæmatímar á viku.
Umsjónarkennari:	Jón Guðnason.
Kennari:	Jón Guðnason.

Lærdómsviðmið:

After the course the students should be able to *recall, describe and define* the following terms: Continuous-time and discrete-time signals. Unit impulse and unit step signal. Continuous-time and discrete-time systems. Causality, stability, linearity, time invariance and systems with memory. Linear time invariant systems. Unit impulse and unit step response. Convolution. Fourier series. Fourier transform. Sampling. Laplace Transform. Z-transform. Filters.

After the course the students should be able to *apply and implement* signal processing methods to real world engineering problems using standard software packages such as Matlab.

After the course the students should be able to *interpret* physical systems signal processing.

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Lesebni: Lathi, *Linear Systems and Signals*, Oxford University Press, Int. 2nd edition, 2010. Hsu, *Signals and Systems*, Schaum's Outline Series, McGraw-Hill, 1995. Oppenheim, Willsky og Nawab, *Signals and Systems*, Pearson, 2014.

Kennsluáðferðir: Fyrirlestrar: Farið er yfir efni vikunnar og atriði varðandi reikniverkefni og dæmablöð eru rædd. Dæmatímar: Nemendur leysa dæmi á dæmablöðum og önnur dæmi.

Námsmat: Tilkynt síðar.

Tungumál: Íslenska.

Birt með fyrirvara um breytingar.

Uppfærðar upplýsingar um námsmat og kennsluáðferðir eru birtar í kennslukerfinu Canvas í upphafi hvorrar annar.