University of HUDDERSFIELD
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Module NME3523: Signal Analysis and Processing

Module Leader: Professor Len Gelman,

Chair in Signal Processing and Condition Monitoring

School of Computing and Engineering

Room RHG/03a

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Module Specification

Lectures	Venue	Practical sessions	Venue	Exam
12 x 2 hours, weeks 25-36	HAG/28-c	12 x 2 hours, weeks 25-36	HA1/16-c	1x3 hours

Assessment task	Length / Deliverable	Weighting within unit
Examination Examination report will be marked anonymously	3 hours, 1 report	75%
Coursework: assignment Assignment report (typically 5000 words) will not be marked anonymously.	1 report	25%

Module Syllabus

- Classification of digital signals (e.g. periodic, deterministic, random, etc.) and digital systems
- The cross and auto correlation/covariance functions
- The discrete Fourier transform and the fast Fourier transform
- The discrete the power spectral density
- The short time Fourier transform
- The digital filtering
- The continuous and the discrete wavelet transforms
- The Wigner distribution
- The short time chirp Fourier transform
- The classical and novel nonlinear higher order spectra