SIGNAL ANALYSIS AND PROCESSING

Module overview

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Module Main Content

- **This module is concerned with the main fundamental algorithms which form the basis of signal analysis and processing**

- **Digital signals will be considered**

Module Structure

The module is divided into:

- **a lectured part**
- **practical sessions**

- **The lectured part covers the main topics of signal analysis and processing theory**

- **Tasks in practical sessions will be related to algorithms discussed in module lectures**

The Lectured Part: Overview

- **Classical part of signal analysis and processing 50%**
- **Advanced part of signal analysis and processing 50%**

Module Assignment

- **Answers to assignment questions should be reported and graphs, displaying the answers, should be shown**

- **It forms part of the assessment for this module**

Module: Industrial Applications

- **Vibro-acoustic monitoring for:**

- **Rotating machinery (e.g. gas and steam turbines, air compressors, gearboxes. etc.)**
- **Reciprocating machinery (e.g. diesels, reciprocating pumps, etc.)**
- **Off-shore pipelines**

- **Fatigue and damping monitoring for:**

- **Rotating machinery**
- **Gearboxes**
- **Materials (e.g. metals, composites, etc.)**

Module: Industrial Applications

Digital signal processing for:

- Radar systems
- Sonar systems (i.e. underwater acoustics)
- Telecommunication
- Mobile phones
- Biomedical engineering

Module: Industrial Support

- **The module will be supported by ongoing research and development for industrial projects**

- **MSc projects will be performed in frames of industrial projects funded by industrial partners, including collaboration with industrial partners, experiments at industrial sites and processing of data from experimental trials.**

- **It is a possibility to obtain an industrial experience through MSc projects and establish useful links with industrial partners.**