**Title**: System Identification and Diagnosis / Systemidentifikation og diagnosticering

**ECTS credits:**
5

**Prerequisites:**
2nd semester on the MSc in Energy Engineering, Sustainable Energy Engineering or similar

**Relevant for:**
MCE, EPSH, PED, WPS, OES, PECT, TEPE, HYTEC

**Objective**:
Students who complete the module will acquire

Knowledge of:

- Fundamental principles of typical methods of system identification
  - parametric as well as non-parametric methods
  - non-recursive as well as recursive methods
- Fundamental concepts, terms and methodologies of Fault Detection and Diagnosis (FDD)
- Some typical model-based and signal-based FDD
- Basic concepts and methods for reliability analysis and evaluation.

Skills:

- Be able to apply the learned knowledge to handle some simple system identification problems under assistance of a commercial software
- Be able to apply and analyse different FDD methods.

Competence:

- Independently be able to define and analyse scientific problems within the area of system identification and diagnosis
- Independently be able to be a part of professional and interdisciplinary development work within the area of system identification and diagnosis.

**Type of instruction**:
The course is taught by a mixture of lectures, workshops, exercises, mini-projects and self-studies.

**Examination format**:
Individual oral examination based on a delivered mini-project/test report (individual or made in groups with maximum 6 persons) and will be held in accordance with the rules in the Examination Policies and Procedures, Addendum to the Framework Provision at Faculty of Engineering and Science, Aalborg University.

**Evaluation criteria:**
As stated in the Framework Provisions