Surveillance et diagnostic des systèmes

Composante
École Nationale Supérieure d'Électrotechnique d'Électronique d'Informatique d'Hydraulique et des Télécommunications

En bref

> **Volume horaire texte (reprise v3):** 19
> **Code:** NEGT4B

Présentation

Objectifs

Have a global vision of what are monitoring and diagnostic

Know different monitoring and diagnostic methods and their fields of application

Identify the main functions involved in monitoring and diagnostic

Description

Course work

- Degradation and faults in electromechanical systems, static converters, passive components (capacitors and inductors), cables and insulators,
- Introduction to diagnosis, supervision and health monitoring, principles and example of existing protections and monitoring solution
- Introduction to dependability

- Classification of diagnosis approaches: model and signal based diagnosis methods, examples of degradation monitoring and fault detections
- Several examples of condition monitoring and diagnosis methods
- Design of experiments as a degradation and lifespan modelling method

Lab project on diagnosis and supervision

1. Illustration of signal-based methods:
-     detection of mechanical unbalance through spectral analysis. (Fast Fourier Transform, Concordia transform).

-     detection of driver drowsiness using time-frequency approaches (Short time Fourier transform, Student T-test, ROC curves).

2. Experimental nonlinear lifespan modeling of electrical wire insulation samples (Design of Experiments, Analysis of Variance)

Infos pratiques

Lieu(x)

> Toulouse