



Faculty of Applied Sciences

MECA2646 Reliability and probabilistic risk analysis.

[30h] 3 credits

This course is not taught in 2006-2007

This course is taught in the 1st semester

Teacher(s): Yves Smeers
Language: French
Level: Second cycle

Aims

Reliability is a study case of probabilities, which allows one to assess availability (or not) of a set-up which could be plagued by random failures.

Main themes

This course provides an introduction to this discipline whose industrial impact is ever increasing, in the nuclear, aeronautical, computer science, chemical# fields. The aim of this course is to allow students to master the basics and be able to apply methodologies (at an elementary level) pertaining to probabilistic risk analysis.

Content and teaching methods

The main topics are:

- Probability concepts for failures
- Failure data processing
- Reliability of simple systems, with repairs
- Event and failure trees
- Methodology of probabilistic risk analysis

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

- Prerequisite : good knowledge in probability theory.
- References : Reliability and Risk Analysis - Methods and Nuclear Power Applications", N. McCormick (Academic Press, 1981).

Other credits in programs

- STAT21MS/ST** Première année du master en statistique, orientation générale, à (3 credits)
 finalité spécialisée (sciences et technologie)
- STAT22MS/ST** Deuxième année du master en statistique, orientation générale, (3 credits)
 à finalité spécialisée (sciences et technologie)