

# UE Systems Reliability and Maintenance

 ECTS  
3 credits

 Component  
UFR PhITEM  
(physique,  
ingénierie, terre,  
environnement,  
mécanique)

 Semester  
Printemps

- > **Teaching language(s):** English
- > **Open to exchange students:** Yes
- > **Code d'export Apogée:** PAXXMIAC

## Presentation

### Description

The objective of this course is to provide a comprehensive foundation in system reliability theory and dependability analysis methods. The following topics are addressed.

- Probabilistic failure models and lifetime modelling of engineering components
- Qualitative approaches to system reliability analysis (FMECA, ...)
- Reliability modelling and analysis of systems and networks of independent components (Fault Tree Analysis, Reliability Block Diagrams, Event Tree Analysis, Structure Function, Minimal Cutsets, Importance Measures)
- Markov processes for systems and networks reliability modelling (systems with dependent components, passive redundancies, tested components, ...)
- Reliability of maintained systems and maintenance policies modelling

### Course parts

CMTD	Lectures (CM) & Teaching Unit (UE)	18h
TP	Practical work (TP)	6h

# Useful info

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## Campus

› [Grenoble - Scientific Polygon](#)