Problem Solving

SCHOOL
Polytech Graduate School of Engineering

CAMPUS
Belle-Beille

LEVEL
Engineering 3rd year

OPEN TO EXCHANGE STUDENTS
Yes

SEMESTER
Spring (S2)

- **Degree course:** Quality, Innovation and Reliability Engineering
- **Teaching unit:** Industrial design
- **Course language:** English
- **Duration (hours):** 24
- **ECTS:** 2
- **Teacher(s):** Pascal Crubleau

Assessment:

- [x] Continuous assessment
- [ ] Final exam

Teaching methods:

[x] Lecture course	8	hours	[ ] Case study
[x] Tutorial course	16	hours	[ ] Project
[ ] Practical work		hours	

COURSE DESCRIPTION

Part 1:

- - Concept of structure, its functioning - Concept of dysfunction - Realized products and services - Concept of compliance and non-compliance - - nonconformities treatment device - - Need to solve recurring problems. Corrective Action Concept - nonconformities analysis and dysfunction encountered - Prioritization (Pareto Law) - - known causes, possible immediate actions, opening an action plan - Cause unknown - Constitution of a working group - The causes (of experience brainstorming-Plan) - Ranking 5M detected causes (Ishikawa) - Search exploitable causes (why 5) - Opening an action plan - monitoring of action plans - Closing action plans - Generalization capitalization. Preventive Action Concept - - related procedures - Management of problem-solving activity - Variations and modifications of the method (PDCA, Kaizen, Hoshin, 8D)

Part 2:
1. The TRIZ theory - Causal Modeling a multifactorial problem situation - The degree of inventiveness - Notions of useful features and harmful functions - Expression and resolution of a technical contradiction - Application generic standard resolution

OBJECTIVES

To understand the improvement approaches based on the use of a structured problem-solving approach - Formulate a problem as a contradiction, Know how to use a DB principles of resolution

PREREQUISITES

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SELECTIVE BIBLIOGRAPHY

Résolution de problèmes Crépin/Pernin/Robin édition Eyrolles

- PDCA et performance durable : Chardonnet édition Eyrolles
- « Découvrir et appliquer les outils de TRIZ », Denis CHOULIER, Edition
- CHANTIERS, Université Technologique de Belfort-Montbelliard.
- « And Suddently the Inventor Appeared », Genrich ALTSHULLER, Technical - Innovation Center, INC.