



OPTIONAL MODULE (6 CFU)

Electromagnetic Compatibility in Industry Applications

M.S. in Mechanical Engineering

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What is Electromagnetic Compatibility (EMC)?

Electrical and electronic devices and systems are characterized by wanted or unwanted emissions of **electromagnetic signals** which propagate:

- along the conductors
(**guided propagation**)
- in the free space
(**radiated propagation**)

Such signals may be captured by other devices, producing **disturbances and malfunctioning**

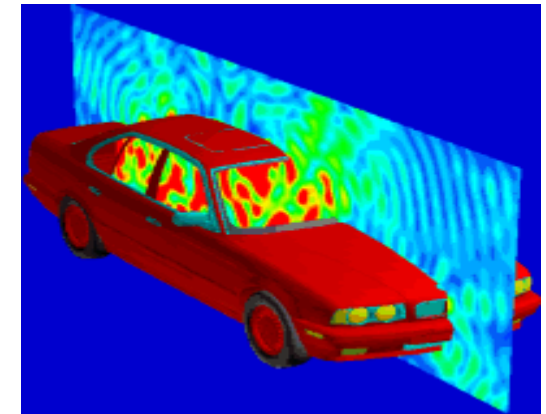
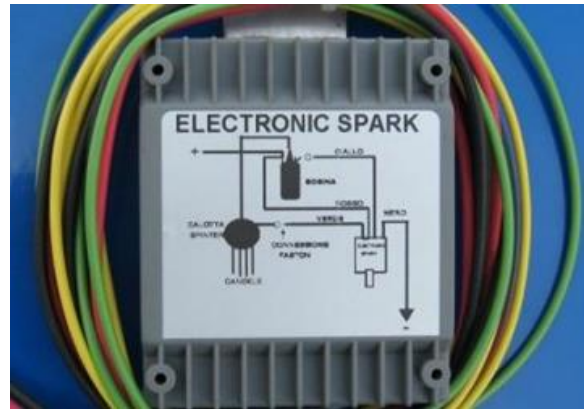


Aims of the course:

Introducing models and analysis techniques for an EMC-aware design of industry applications

Main issues:

- increasing clock frequency
- increasing bandwidth
- reduced space
- mixed signal systems



Methods:

- modeling EMC problems
- EMC-aware design
- EMC certification





Course Info

Required preliminary knowledge:

- Basic knowledge of electromagnetics and of circuit theory

Activities:

- 12 h - Theory and models for EMC problems*
- 12 h - Simulation Lab (computer room)*
- 24 h – Project works

***ATTENDANCE IS STRONGLY SUGGESTED**

Project work:

- The project works will address 5-6 EMC problems presented in the course

Simulation tools:

- Matlab, PSPICE

Final examination:

- Written questionnaire
- Discussion of the project works

