PhD Course on "Cyber-Physical System Security"

Prof. Massimo Merro

- **1 A Cyber-Physical World**

  - Chapter Summary
  - Basic Concepts and Definitions of a Cyber-Physical World
  - Defining Cyber-Physical Attacks

- **2. A History of Cyber-Physical Security Incidents**

- **3. Cyber-Physical Attacks on Implants and Vehicles**

  - Implantable Medical Devices
  - Vehicles
  - Follow-Up Questions and Exercises

- **4. Cyber-Physical Attacks on Industrial Control Systems**

  - SCADA
  - Stuxnet: A Milestone in Industrial Control System Security
  - The Electric Grid

- **5. Cyber-Physical Attack Steps**

  - Preliminary Research and Reconnaissance
  - Vulnerability Discovery
  - Intrusion
  - Attack Delivery
  - Antiforensics
  - Follow-Up Questions and Exercises

- **6. Protection Mechanisms and Secure Design Principles**

  - Protection Mechanisms
  - Secure Design Principles

CLASS MEETING
September 2020 – 12 hour