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800 students using Matlab during a new course on Systems Modeling at CentraleSupélec

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800 students using Matlab during a new course on Systems Modeling at CentraleSupélec

Cristina Stoica Maniu, Guillaume Sandou, Véronique Letort-Le Chevalier, **CentraleSupélec**

In the context of a new curriculum, CentraleSupélec proposes a new core course on *Systems Modeling – Model Representations and Analysis* for all the first year students. The students learn how to represent the behavior of a system with a well-suited model and how to evaluate the validity domain of the proposed model.

In order to make the course easy-understandable, interactive and attractive for students, Matlab-based tutorials were proposed. In addition, 201 mini-projects were proposed, developed (using either Matlab/Simulink or Python) and peer reviewed (via Edunao) by the students.

Advantages of using MATLAB (and Simulink):

- Simulate and analyze the behavior of the proposed models (continuous-time or discrete-time models, continuous-state or discrete-state models)
- Gain experience by practicing the modeling process during a mini-project with numerous application fields (energy, robotics, health, financial modeling, nature, sociology, etc.)
- Stimulate students' creativity via 201 mini-projects

“ High level academic program at CentraleSupélec on dynamical **System Modeling** made **easy-understandable** and **inspiring** for the 800 engineering students via **MATLAB® simulations** ”

Blood test laboratory modeling
Vehicle weighting system Prostate cancer tumor model analysis
Initial heterogeneous levels in systems modeling
Matlab simulations Diabolo throwing modeling
Robot arm modeling **Systems modeling**
Product storage system Identification of an industrial furnace
800 engineering students Peer-reviewed mini-projects
Analysis of flexibility modes of a bridge
Analysis of dynamical properties of swords

» Explore Systems Modeling via Matlab simulations

Presented at MATLAB EXPO 2019 France

▶ Watch video (00:00) (Paste Link Here)