Course: Modelling and Simulation — credits: 4

Course code	ELVH16AMS
Name	Modelling and Simulation
Study year	2022-2023
ECTS credits	4
Language	English
Coordinator	B.D. Williams
Modes of delivery	Lecture Practical / Training
Assessments	Modelling and Simulation - Assignment

Learning outcomes

- Translate a range of problems from a real-world situation into a mathematical form – i.e. a mathematical model.
- Translate a mathematical model of a real world situation into a simulation
- Translate the results of a mathematical model and simulation back to the real-life situation.
- Select the correct first order physical components for modelling a complex problem.
- Discuss the validity of a mathematical model and suggest possible improvements.
- Find the response to a step input for 1st and 2nd order systems using simulation.
- Designing control systems using simulation and keeping in mind design parameters.
- Determine the impact of discretization parameters by deriving and solving a difference equations.
- Perform simple numerical integration and differentiation using a simulation environment.

Content

Included in programme(s)

Electrical Engineering Major Sensor Technology

School(s)

Institute of Engineering

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