Obuda University John von Neumann Faculty of Informatics	Institute of Applied Mathematics	
Name and code: *NAMSC1EVND Scientific Computing*	**Credits:*4***	
	2024/25 year II. semester	
Subject lecturers: Dr Kósi Krisztián		
Prerequisites (with code):		
Weekly hours:	Lecture:	Seminar.:	Lab. hours:4	Consultation:
Way of assessment:		

<table>
<tr><td colspan="3" align="center">Course description:</td></tr>
<tr><td colspan="3"><i>Goal</i>: trol. The course contains the necessary mathematical tools, and extends the basic ideas of the Non-Linear systems to the Adaptive Non-Linear control.</td></tr>
<tr><td colspan="3"><i>Course description:</i> To give the students an overview of mathematical methods used in Control Theory. The course contains a programming part that shows the algorithms in Julia language and discusses the coding efficiency in sense of efficient code writing, and efficient code running time.</td></tr>
</table>

Lecture schedule	
Education week	*Topic*
1.	Introduction, and LaTeX typesetting and set up the development environment.
2.	Intrroduction to Julia language, Mathematical background (Differential Calculus)
3.	Mathematical background (Differential equations and visualizations)
4.	Mathematical background (Series, Multivariable)
5.	Fractals and Montecarlo method
6.	Genetic algorithms
7.	Metrics and Multidimensional Scaling
8.	Numerical methods Rootfinding and Numerical Derivatives
9.	Modelling and simulations Numerical integrals
10.	Robust Control SISO
11.	Robust Control MIMO
12.	Adaptive Control SISO
13.	Adaptive Control MIMO
14.	Project Presentation

Midterm requirements

	Education week	*Topic*	

Final grade calculation methods

The final grade calculated from the homeworks, or can be done a home project. If someone absent at lecture and lab, more than 30% will have denied from the course.

Achieved result	Grade
89%-100%	excellent (5)
76%-88<%	good (4)
63%-75<%	average (3)
51%-62<%	satisfactory (2)
0%-50<%	failed (1)

Type of exam

Type of replacement

References

Mandatory:
Lecutre Notes

Recommended:

2024. 11. 22.