Obuda University John von Neumann Faculty of Informatics			Applied Mathematics Institute	
Name and code: Intelligent Development tools NMXIF1SMNE **Credits*:*** *2022/23 year II. semester*				
Subject lecturers: Dr Kósi Krisztián				
Prerequisites (with code):				
Weekly hours:	Lecture:	Seminar.:	Lab. hours: 2	Consultation:
Way of assessment:				
Course description:				
Goal: Introduce modern scientific computational tools				
Course description: Learn modern, open source computational tools for scientific computing, to solve hard mathematical problems, related to nonlinear control theory.				

Lecture schedule	
Education week	*Topic*
1.	Introduction, LaTeX based word processing and Julia programming language
2.	Mathematical background
3.	Numerical computation
4.	Modeling and simulations
5.	Lyapunov stability
6.	Sliding Mode
7.	SISO example for Sliding Mode Control
8.	MIMO example for Sliding Mode Control
9.	Theory for Fixed Point based adaptive control
10.	SISO example: planning
11.	SISO example: implementation
12.	MIMO example: planning
13.	MIMO example: implementation
14.	Home Project presentation

Midterm requirements

Education week	*Topic*
14	**Submit and present a Home Project.**

2023. 01. 18.

Final grade calculation methods

Home project with presentation, and documentation and programs, or the results of the homework problems. The better result will be the final grade. Who absent more than 30% will be denied from the course.

Achieved result	Grade
86%-100%	excellent (5)
74%-85%	good (4)
62%-73%	average (3)
50%-61%	satisfactory (2)
0%-49%	failed (1)

Type of exam

Type of replacement

Sign. Retake Exam from the mathematical problems, which covered in the semester.

References

Mandatory:

System and Control Theory - József K. Tar - László Nádai - Imre J. Rudas. TYPOTEX 2012, ISBN 978- 963-279-676-5

Applied Nonlinear Control, Slotine and Li, Prentice-Hall 1991

Recommended: