Advanced Automatic Control

If you have a smart project, you can say "I'm an engineer"

Staff boarder

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Instructor

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Advanced Automatic Control
MDP 444

Projects 2017/2018

Course plan

week	Date	Contents	Requirements	Laboratory	References	Marks
1	19-9	Introduction Syllable/Course specs Control system classifications System Modeling			Ref-01	
2	26-9	Mathematical Modeling (mechanical-hydraulic) (motors and combined systems)		DC-Motor control		
3	03-10	Modeling and block diagram Transfer function and State space	Quiz			5/3 quizes
4	10-10	Transfer function and State space Time Response (2nd order)		Electrical-mechanical analogy		
5	17-10	steady state Error, Stability analysis	Quiz			5/3 quizes
6	24-10	Frequency Response Bode Plot		Filters		
7	31-10	Midterm				15

Course plan

week	Date	Contents	Requirements	Laboratory	References	Marks
8	07-11	Design Controller and system compensation				
9	14-11	PID / Design	Reports (Quadcopter)	DC- motor Kit	Ref-01	5
10	21-11	Optimal and LQR control	Quiz	Operational amplifier circuits		5/3 quizes
11	28-11	Fuzzy Logic Control			Ref-02	
12	05-12	Neural Network (Case study)				
13	12-12	Corrective exam and Receive project				10 for exam 20 for project

Evaluation rules

Report Contents

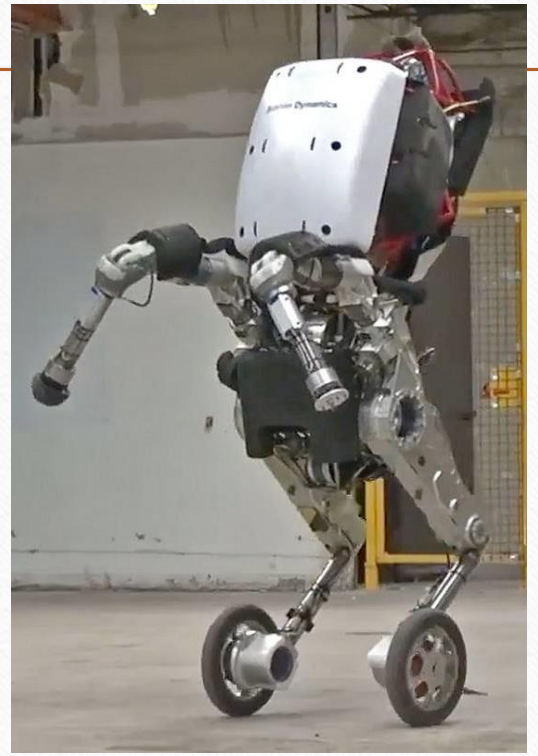
- Research plane
- Aim
- Tools/facilities
- Methodology/control strategy
- Experimental works
- Result/ conclusions

Marks distribution

Marks \ assesments	Assessments		Final Exam	Total
	• MidTerm	15	80	
	• Projects	20		
	• Report	5		
	• quizes	5		
TOTAL		45	80	125

Projects

Underwater ROV robot (Proj-01)



Seg-way dynamic robot (Proj-02)

EndoWrist Robot Da-vinci (Proj-03)

Legged Robot littleDog (Proj-04)

https://youtu.be/-7xvqQeoA8c