

Óbudai Egyetem Kandó Kálmán Villamosmérnöki Kar		Műszertechnikai és automatizálási Intézet		
Tantárgy neve és kódja: Automation KMAAU11ANC Kreditérték: 2				
<i>nappali tagozat</i> <i>tavaszi félév</i>				
Szakok melyeken a tárgyat oktatják: Villamosmérnöki szak				
Tantárgyfelelős oktató:	Dr. Csuka Antal		Oktatók:	
Előtanulmányi feltételek: (kóddal)				
Heti óraszámok:	Előadás: 2	Tantermi gyak.: 0	Laborgyakorlat: 0	Konzultáció:
Számonkérés módja (s,v,f):	Félévközi jegy			
Curriculum				
<i>Educational Aim:</i> Learning the basic concept of the open and closed loop control. Review the theoretical background of closed loop control, structure of a control system, signals and basic control blocs. Time response, frequency response, steady state characteristics. Process control basics, some process automation problems and solutions. . Equipments used in controls system: Industrial Buses, Process Automation Equipments, PLC systems.				
Class schedule:				Hours:
1. Introduction. Review the theoretical background of closed loop control. Structure of a control system, signals and basic control blocs. Standard test signals.				2
2. Transfer functions of a feedback loop. Time domain response of a feedback loop. Steady state error, overshoot...				2
3. Stability of a closed loop system. Stability examination.				2
4. Structure of a classical PID controller. Tuning controllers. Multi loop systems. Cascade controller..				2
5. Basic concepts of Process automation. Process automation problems				2
6. Structure of a process automation system. Used equipments,				2
7. PLC programming (Ladder, FB, SFC, CFC...)				2
8. Automatic control systems, PLC systems. PLC categories				2
9. Industrial buses (eg. MODBUS, INTERBUS, ASI BUS, ...)				2
10. Industrial Ethernet, Industrial wireless networks				2
11. Review of the basic sensors.				2
12. Review of the basic actors.				2
13. Integrated control system. Review of the whole semester.				2
14. Small group conversation and oral examination.				2
Requirements				
Attendance of the lecture is compulsory (you are allowed to be absent 2 times). Each student has to give a 10-minute- presentation on a given topic. On the last lecture group conversation and oral examination.				
Type of the examination: oral examination.				
Recommended readings:				