Name of the subject: **Automatic manufacturing systems II.**	NEPTUN code: KMWAG6ABNE	Weekly hours: 2 lec+0 gs+ 1 lab	Credit: 3 Req: Examination
Subject leader: **Dr. György Schuster**		Prerequsites: KMWAG5ABNE	

Description of the subject:
Review of object oriented methodology. Industrial robots and intelligent sensors.
Simulation methods. Network programming. Soft computing methods (fuzzy logic, neural networks, genetic algorithms) and application in case of automatic production systems.
Intelligent sensors (vibration sensors, vision modules, load sensors, etc).
Mixed type production systems (ship yard, plane production).
Viewpoint for building them. Informatics of production systems and their connection to other information systems of the company.
Laboratory exercise: - TCP/IP programming using several protokoll.   - RS232C,   - I2C (TWI),   - CAN bus,   - LIN bus programming.   - Usage of FPGA (soft processors design).   Usage of 32 bit microcontrollers.
Mid-term requirements   The codes to be prepared jointly (with the instructor) and independently in the lab exercise must be uploaded by everyone to the Google classroom created for the course, accompanied by documentation.   The HFs issued in the lab exercises must also be uploaded to the Google classroom by the deadline.   During the semester, 1 large electronic ZH paper and 1 large HF are expected.   In the midterm assignments and papers, the student must achieve a minimum of 50% in all of them to successfully complete the semester.   How to make up   Make-ups are possible once at the end of the semester.   The method for determining the examination mark: 25% of the examination mark is the average of the results of the control tests, homework, minutes, 25% of the mark is the result of the ZH paper and 50% of the mark is the result of the independent assignment.   0-50% unsatisfactory, 51-65% satisfactory, 66-75% average, 76-90% good, 91-100% excellent

Literature:
Mikell P. Groover "Automation, production systems, and computer-integrated manufacturing" Prentice Hall 2007 ISBN 0-13-239321-2
J Norberto Pires "Industrial Robots Programming" Springer 2007 ISBN 0-387-23325-2
http://www.book123.net/introduction-to-fpga_230244.html
www.arm.com/files/pdf/IntroToCortex-M3.pdf
en.wikipedia.org/wiki/**ARM_**architecture
Remarks: