

COURSE TITLE: DISTRIBUTED MONITORING AND CONTROL SYSTEMS

Institute/Division: Institute of Electromechanical Energy Conversion / Faculty of Electrical and Computer Engineering

Erasmus subject code: 0713, 0714...

Number of contact hours: 45

Course duration: 1 semester

ECTS credits: 6

Course description: Distributed monitoring and control systems - chosen aspects; Measurement Interfaces in telemetric systems; Network systems: relation, topology, transmission medium, rules of medium access, industrial networks. Data transmission systems using cable phone network. Measurement systems based on radio link. Measurement systems in a mobile communication network GSM. Usage of computer network standard (Ethernet) in industrial systems. SCADA systems. Exemplary solutions of professional monitoring systems of distributed objects in power system (Tele measuring system for diagnostic applications, Monitoring and control system for Small Hydropower Plants).

The course contains laboratory exercises and projects in the scope of: distributed system of PLC devices, telemeasuring system for diagnostic applications, Scada system for electrical drives, control panel programming.

Course type: lectures (15h), laboratory (20h), project (10h)**Literature:**

1. Practical SCADA for Industry. David Bailey, Edwin Wright. Elsevier. 2003 Austria
2. SCADA: Supervisory Control and Data Acquisition. Stuart A. Boyer 2009
3. Practical Industrial Data Communications - Best Practice Techniques, D. Reynders, S. Mackay, E. Wright, Elsevier, 2005 UK.