

E – Charakteristika studijního předmětu/Subject Specification				
Název studijního předmětu / Subject title	Measurement and Diagnostic of Machines			
Typ předmětu / Subject type	Obligatory elective		dopor. ročník / semester/ recommended year / semester	2/4
Rozsah studijního předmětu / Study load in hours and credits	2	hod. za týden / weekly load	2+2	Kreditů / Credits 5
Jiný způsob vyjádření rozsahu / Other expression of study load	10 weeks, each 2 hours of lectures and 2 hours of seminary			
Způsob zakončení / Assessment	Exam		Forma výuky / Form of teaching	Lectures and labs
Další požadavky na studenta / Other demands on students				
Vyučující / Lecturer	Jan Václavík, M.Sc. Ing. Martin Diblík, PhD.			
Stručná anotace předmětu / Subject annotation	<p>Subject's goal is to provide brief insight into theory and praxis of automated measurement in technical plant. Lectures deals with comprehensive view of methods and tools used in automated measurement, basic of digital signal processing and data evaluation.</p> <p>Labs are in form of informal team-based student's activities centered on 4 week lasting projects. Projects are designed to imitate realistic tasks in technical plants, thus requiring active cooperation of students (problem analysis, finding optimal solution, experiments, data processing, documentation and technical report). Emphasis will be given on use of modern methods of data processing, result presentation and reasonable conclusions.</p>			
Informace ke kombinované nebo distanční formě / Information for students in external form of study				
Rozsah konzultací (soustředění) / Consultations, study meetings	3		hodin za týden / hours per week	
Rozsah a obsahové zaměření individuálních prací studentů a způsob kontroly / Individual student work – type, load, content and way of checking				
Type: theoretical work with one experiment in laboratory Content: design of computer fictive controlled measurement system Load: approx. 12 hours, 2 hour in laboratory Checking: Progress checking via work reports, completion checking at the end of course				
Studijní literatura a studijní pomůcky / Reading list and study utilities				
Webster, John G.. The Measurement, Instrumentation and Sensors Handbook. 1st edition. CRC Press: 1998. 2608 p. ISBN 978-0849383472 Gertler, Janos. Fault Detection and Diagnosis in Engineering Systems. 1st edition. CRC Press: 1998. 504 p. ISBN 978-0824794279 Bailey, Oliver H.. Embedded Systems: Desktop Integration. Wordware Publishing: 2005. 472 p. ISBN 978-1556229947 MARINESCU, Ioan D., ISPAS, Constantin, BOBOC, Dan. Handbook of Machine Tool Analysis. CRC Press: 2002. 322 p. ISBN 978-0824707040 Anything about computer controlled measurement systems, basics of analog and digital electronics, ADC and DAC, system buses and protocols related to PC and measurement tools (RS232, RS422/485, GPIB, USB, IEEE1394, Ethernet/TCP-IP...).				