

Course description

Code: 2Y022	Abbr: MS_E	Title: Maintenance Systems (MS_E)	
MSc. degree programme in: Transport means maintenance For specialisation in:			
Lecturer:	Doc. Ing. Juraj Grenčík, PhD., Department of transport and handling machines		
Semester: Autumn Recommended: 3	Number of hours: <i>Lectures - Seminars - Laboratory work</i> Per week: 2-2-0 Total per semester: 26-26-0		ECTS Credits: 5
Prerequisites:			
Assessment: recognition of course work - 50% written and oral examinations - 50%			
Aims and objectives: The goal of the course is to learn about maintenance systems focused on the creation of maintenance strategies and improvement of maintenance performance. To be able set up the objectives, methods to achieve the objectives as well methods of maintenance performance assessment. To know the individual components and their tasks in the maintenance process, learn about standards for management and quality in maintenance.			
Course content: Historical evolution of maintenance. Maintenance terminology – fundamental terms, events and states in maintenance. Fundamentals of theory of reliability. . RCM – reliability centred maintenance – introduction. Physical assets management – procurement, determination of assets importance levels. Types of maintenance – corrective and preventive maintenance. Condition-based maintenance and predictive maintenance. Strategies for determination of maintenance type. Organization forms of maintenance in a company. Internal and external maintenance; maintenance outsourcing. Management of maintenance resources (personnel, machines and equipment, spare parts). Maintenance audits and benchmarking– principles and management. Standardized requirements on documents for maintenance. Preparation of maintenance contracts. TPM – basic concept, evaluation of overall equipment effectiveness, methods and tools for continual improvement, implementation in practice.			
Recommended texts: Wilson, A. et al.: Asset Maintenance Management, Aleden press, Oxford, 1999 Moubray, J.: Reliability-centred Maintenance II, Butterworth-Heinemann, 1997 Fabrycky, W. J., Blanchard, B. S.: Life cycle cost and economic analysis, Prentice Hall Inc., New Jersey Ben-Daya, M., Raouf, ., Knezevic, J., Ait-Kadi. D.: Handbook of Maintenance Management and Engineering, Springer-Verlag London Limited 2009			
Note:		Date of the last revision: 05.12.2022	