Table 5.2 Specification of Course

Study Program: **Material and Energy Flows Management**				
Type and level of study: Master Academic Degree				
Name of Course: ENERGY MONITORING				
Lecturer: Zoltan Zavargo				
Status of Course: elective				
Credits (ECTS): 5				
Preconditions: none				
Aims of the Course Aim of the course is to give knowledge in order to be able to build appropriate energy efficiency decisions/policy. Energy monitoring gives valuable data on energy. It is important to develop and maintain indicators to better inform policy making and decision makers in order to formulate appropriate energy policies. Energy indicators are an important tool for analysing interactions among economic and human activity, energy consumption and carbon dioxide (CO_2) emissions. Decomposition or factorisation analysis quantifies the impact of different driving forces or factors on energy consumption. Understanding how each of the elements impact energy consumption is essential to determine which have the largest potential to reduce energy consumption and the areas that should be prioritised for the development of energy efficiency policies. The aim of the course is to give systematic knowledge on energy monitoring and to be able to build an appropriate energy monitoring system and energy efficiency indicators.				
Outcomes/Competences of the Course After completing the course the student will be able to understand energy monitoring principles as well as to energy efficiency indicators meaning and significant. Students are trained to use existing energy monitoring systems to modify it as well as to create/develop new one. They will be able to use appropriate indicators as well as to develop specific ones. They will be able to analyse quantifies the impact of different driving forces or factors on energy consumption and to understand how each of the elements impact energy consumption which are essential to determine which have the largest potential to reduce energy consumption.				
Description of the Course Content Energy efficiency and energy monitoring; Methodology for analysing trends in energy consumption; Energy efficiency indicators; Energy efficiency indicators in Residential and Service Sector; Energy efficiency indicators in Industry Sectors; Driving energy consumption in energy sector; Indicators development and prioritising; Energy efficient indicators in transport sector; Decomposition or Factorisation Methodologies.				
Required Readings 1. Technology and Energy Sources Monitoring: Control, Efficiency, and Optimization, Technology and Energy Sources Monitoring: Control, Efficiency, and Optimization, Jozef Flizikowski, Kazimierz Bielinski, 2013 2. Energy Management Principles and Practice, second edition, Vilnis Vesma, UK, 2011				
Lessons				Other hours
Theory: 45	Practice:30	Other:	Research work	
Teaching Methods Lectures and students group work				
Grade (maximal number of points: 100)				
Pre-exam duties	**Points**	**Final exam**		**Points**
Activity during the lectures	10	Oral exam		30
Test I and Test II	40			
Seminar paper	20			