A modernized curriculum for Master's degree in Industrial Engineering

List of Program Learning Outcome (PLO)	
Upon the graduation from MSIE 4.0 program, graduates should be able to	
PLO 1	apply knowledge and methods from the advanced science of industrial engineering to design, model and manage Industry 4.0 related complex industrial systems
PLO 2	implement smart production and co-created product design & development concepts
PLO 3	utilize big data and real time data analytics for supporting smart production, product design & development and advanced manufacturing process
PLO 4	exploit online connectivity for strengthening business capability
PLO 5	improve sustainability by applying IE related knowledge and competences
PLO 6	conduct research in the field of Industrial Engineering (IE)
PLO 7	manage Industry 4.0 related projects
PLO 8	manage Smart Production Systems and Supply Chains
PLO 9	lead, manage, work and communicate effectively in interdisciplinary, intercultural and distributed teams
PLO 10	perform with high degree of autonomy and responsibility
PLO 11	demonstrate continuous self-development by effectively improving competences for professional career
PLO 12	demonstrate entrepreneurial attitude towards Industry 4.0 related businesses and its problems

Structure of the Program

Minimum Credit Requirement for Coursework: 24

Minimum Number of Courses Required to Graduate: 8

Number of Required Courses: 3

Number of Compulsory Courses: 1

Number of Elective Courses Available: 12

Course Code	Title	Course Credit	Type
1	Enterprise Management in Digital Economy	3(x-y)	Elective
2	Project Management for Industry 4.0	3(x-y)	Elective
3	Smart Operations Management	3(x-y)	**Required**
4	Quality Management for Extended Enterprise	3(x-y)	Elective
5	Sustainable Supply Chain Management	3(x-y)	Elective
6	Digital Factory	3(x-y)	**Required**
7	Advanced Optimization: Techniques and Industrial Applications	3(x-y)	Elective
8	Intelligent Decision Support Systems	3(x-y)	Elective
9	Applied Data Analytics	3(x-y)	**Required**
10	Cyber-Physical Industrial Systems	3(x-y)	Elective
11	Collaborative Manufacturing Systems	3(x-y)	Elective
12	Additive Manufacturing for Industry 4.0	3(2-3)	Elective
13	Innovative Product Design and Development	3(2-3)	Elective
14	Human-Centric Design for Operator 4.0	3(x-y)	Elective
15	Customer Experience-Driven Design	3(2-3)	Elective
16	Leadership Communication and People Development in Digital Era	3(1-6)	**Compulsory**