UNIVERSITY of DEBRECEN

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Name of the course:	**Applications of fuzzy systems**
Course type:	Optional
Responsible lecturer:	Dr. József Menyhárt
Content:	Basics of Fuzzy sets, Basics of Fuzzy logic, Higher level fuzzy sets, Numerosity of fuzzy sets, CNF, fuzzy numbers, Arithmetic of fuzzy numbers, Operations on fuzzy sets, Language variables, Semantics of fuzzy sets, Fuzzy partitions and their properties, Mamdani-type fuzzy inference systems, Determination of the measure of fit, Determination of the inference associated with a rule, Aggregate inference, Larsen's product operation rule, Application of sigmoid function, Fuzzy logic and Matlab, Monte Calro method, Vehicle and industrial case studies
Literature:	• Valluru B. Rao: C++ Neural Networks and Fuzzy Logic, ISBN 9781558515529, Second Edition, John Wiley and Sons, 1995. • S. Rajasekaran, G.A. Vijayalakshmi Pai: Neural Networks, Fuzzy Systems and Evolutionary Algorithms, ISBN 9788120353343, PHI Learning; 2nd Revised edition, 2017. • Himanshu Singh: Deep Neuro-Fuzzy Systems with Python With Case Studies and Applications from the Industry, ISBN 9781484253601, Apress; 1st ed. edition, 2019.