



University of Tehran
School of Industrial Engineering
(Course Plan)

Course Name: Multi Criteria Decision Making (MCDM)	Course No.: 810913301
Course type: Required <input type="checkbox"/> Elective <input checked="" type="checkbox"/>	Credits: 3
Course Level: Undergraduate <input type="checkbox"/> Graduate <input checked="" type="checkbox"/>	
Instructor: Seyed Ali Torabi	Academic position: Associate Professor
Date: 30/08/1392	
Prerequisite(s): Operations research 1	
Course objectives: Describing the most applied and effective MCDM techniques including the MADM and MODM methods	
Required software: GAMS, Expert Choice, Super Decision, ELECTRO PRO, Decision LAB	
Grading: Assignments: 15% Final exam: 60% Term project: 25%	
Course references: <ol style="list-style-type: none">1. Saaty, T.L. and Vergas, L.G., (2006). <i>Decision Making with the Analytic Network Process</i>, Springer Science + Business Media, LLC.2. Ehrgott, M. (2005). <i>Multicriteria optimization</i>. 2nd Edition, Springer Verlag.3. Figueira, J., Greco, S., Ehrgott, M. (2005). <i>Multiple Criteria Decision Analysis: State of The Art Surveys</i>. Springer Science + Business Media, LLC.4. Tzeng, G.H. and Huang, J.J., (2011). <i>Multiple attribute decision making: Methods and applications</i>, Taylor & Francis, CRC Press.5. Selected papers in MCDM.	

Course Schedule

Week	Subject
1	An introduction to MCDM-Data normalization methods
2	Weighting methods (Entropy, DEA, LSM, LLSM)
3	Weighting methods (EVM, Approximation methods)
4	Weighting methods (LP method), MADM techniques classification, SAW
5	AHP, Group AHP
6	ANP, DEMATEL
7	TOPSIS, VIKOR
8	Linear Assignment method, ELECTRE I
9	ELECTRE III, PROMETTE I, II
10	PROMETTE V, hybrid MADM techniques
11	An introduction to MODM
12	An introduction to MODM (con.)
13	WSM, -constraint method
14	Augmented -constraint method
15	Compromise Programming, Goal Programming