University of Tehran
School of Electrical and Computer Engineering

Course:	**8101254 – Design of Electrical Machines**		
Course type:	elective	EE*	Credit: 3
Level:	Graduate		
Co-requisite(s):			
Prerequisite(s):			
Prerequisite by topic:			
Textbook(s):	[1] E. S. Hamdi, *Design of small electrical machines*. John Wiley & Sons, Inc., 1994. [2] V. Mittle and A. Mittal, *Design of electrical machines*. NC Jain, 2002. [3] A. Sawhney and A. Chakrabarti, *Course in Electrical Machine Design*. Dhanpat Rai, 2010. [4] J. F. Gieras, *Permanent magnet motor technology: design and applications*. CRC press, 2002. [5] I. Boldea, *The induction machines design handbook*. CRC press, 2009. [6] J. Pyrhonen, T. Jokinen, and V. Hrabovcova, *Design of rotating electrical machines*. John Wiley & Sons, 2013. [7] K. Hameyer and R. Belmans, "Numerical modelling and design of electrical machines and drives," 1998.		
Coordinator:	Hamid Lesani		
Goals:	Educating principle of electrical machine designing, conceptual designing of different kind of electrical machines and detailed designing of single kind of machine.		
Outcome:	Be able to designing different kinds of electrical machines.		
Topics:	1- Principle of conceptual designing of electrical machines, factors and limits 2- Materials in electrical engineering and utilize materials in different kinds of machine 3- Thermal conducting in electrical machines 4- Cooling of different kind of electrical machines and designing thermal circuit 5- Magnetic calculation and magnetic circuit in machines 6- Mechanical calculation of electrical machine elements 7- Detailed designing of distribution and power transformers 8- Dilated designing three phase induction motors 9- Being familiar with designing by computer 10- Detail designing three phase transformers by computer		

	11- Detail designing induction motors by computer 12- Being familiar with FEM software for calculating operation of designed machine
Computer usage:	FEM
Assignments:	
Projects:	1 Project
Grading:	• Final exam 40% • Midterm exam 40% • Project 20%
Further readings:	
Prepared by:	Hamid Lesani
Date:	Sept. 14, 2017

*EE: Electrical Engineering