



Program and Degree: BSc in Aerospace Engineering	
Course Description	
Course Title	Heat Transfer
Prerequisites	Thermodynamics I
The course aims	<p>Students' acquaintance with the principles and methods of heat transfer and its engineering applications</p> <ol style="list-style-type: none"> 1- Ability of modeling of heat transfer in objects and environments 2- Ability to design and calculate a heat transfer system from an environment
Contents	<ol style="list-style-type: none"> 1- Different methods of heat transfer, basic heat transfer rules 2- Steady state one-dimensional conductive heat transfer 3- two-dimensional and three-dimensional conductive heat transfer 4- Non-steady conductive heat transfer 5- Radiation heat transfer: thermal radiation and black box radiation, radiation properties, radiation from black and gray surfaces. 6- Convection heat transfer: the principles of convection, the smooth boundary layer and the energy equation in the boundary layer, the thermal boundary layer, determination of the convection coefficient, the heat transfer in the turbulent boundary layer, the convection in the tube. 7- Empirical relations in forced convection: The heat transfer in the pipes in which the fluid is flowing, the heat transfer in a stream that flows on a tube or on a sphere. 8- An introduction to free convection
Duration	1 Semester (16 weeks)
Course Hours	3 hours/week
Course Type	Required