

## ١٥- علم الانتقال الحراري والديناميكا الحرارية المتقدم

<u>No.Trainees</u>	<u>Language</u>	<u>Target Audience</u>	<u>Course Duration</u>
١٢:٢٠	Arabic - English	Mechanical engineers	٥٠ hours

### Content

- Heat transfer by conduction in solid materials
- (linear - radial).
- Heat transfer by conduction (liquid - gas)
- Heat transfer by free convection and fins effect.
- Heat transfer by forced convection and computation (Re, Nu, Pr)
- Heat transfer by radiation
- Water and air heat pump.
- Two-stage reciprocating compressor
- Heat exchangers (concentric tube, shell and tubes)
- Four-stroke engine.
- The boiling process
- Condensation process
- Steam turbine
- Gas turbine



### Objective

- Study the basics of heat transfer and thermodynamics in detail and in different ways, as well as the effect of the composition and shape of the material on the rate of heat transfer.
- Study some important practical applications used in the industry, as well as those used in converting energy from one image to another.

### Prerequisites

- Student of the Faculty of Engineering- majors of(mechanical power - Mechatronics - Chemical Engineering)
- To have the basic principles of the following sciences (engineering materials - fluids – heat transfer - thermodynamics), Or mechanical engineers with previous specializations