

**Faculty of Engineering & Technology**

**Fundamentals of Heat Transfer**

**Information :**

**Course Code :** MEC445

**Level :** Undergraduate

**Course Hours :** 2.00- Hours

**Department :** Mechatronics Engineering

**Description :**

Mechanisms of heat transfer. Steady heat conduction in plane wall; thermal resistance concept, thermal resistance networks, thermal contact resistance. Heat conduction in cylinders and spheres. Critical radius of Insulation. Heat transfer from extended surfaces. Optimum thickness of Insulation. Transient heat conduction. External forced convection over flat plates, cylinders, spheres. Internal forced convection inside pipes and ducts. Basics of heat radiation. Introduction to heat exchangers; types, fouling and analysis.