# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

## Department of Mechanical Engineering

***REPORT OF SKILL BASED MINI PROJECT***

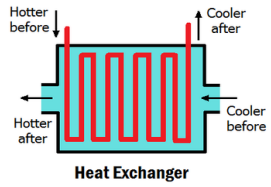
## Heat and mass Transfer (190513)

**Title of Project:**

Study of Heat Exchangers With Practical Examples.

**Introduction**: A heat exchanger is a device which transfers heat from one medium to another, a Hydraulic Oil Cooler or example will remove heat from hot oil by using cold water or air. Alternatively a Swimming Pool Heat Exchanger uses hot water from a boiler or solar heated water circuit to heat the pool water. Heat is transferred by conduction through the exchanger materials which separate the mediums being used. A shell and tube heat exchanger passes fluids through and over tubes, where as an air cooled heat exchanger passes cool air through a core of fins to cool a liquid.

**Description of Model**




**Applications of Model**

- Steady state process
- Ignore the contact thermal resistance between each boundary
- Thermal conductivity for each material is constant in every direction
- The radiation effects can be neglected
- The reactant fluid was flowing through laminar flow
- The radiation effects from steel to ambient were neglected
- There is uniform heat generation from the furnace

**What I Learned Through Project:** I learnt about the deep knowledge of Heat Exchanger and saw practical examples of the same by performing in Laboratories and solved derivation with real life based Numerical.

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**Submitted To**
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Assistant Professor

**MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR**

**Department of Mechanical Engineering**

# COMPILED REPORT OF SKILL BASED MINI PROJECT

**Heat and mass Transfer (190513)**

**Session: December – June 2022**


**Submitted By**

**Fourth Semester**

**Automobile Engineering**

**Submitted To**

**Prof. Bhupendra Kumar Panday**

**Assistant Professor**