

**SUBJECT: AUTOMOTIVE AND COMBUSTION ENGINE TECHNOLOGY**

**SUBJECT CODE: 2180210**

**TUTORIAL- 1**

1. Explain Stratified charge engine and homogeneous charge engine.
2. Explain Gasoline engine fuel economy analysis.
3. Define Atkinson cycle and miller cycle.
4. Explain High pressure fuel injection system.

**TUTORIAL - 2**

1. Give the Advantages of GDI in terms of Efficiency, in real Engine.
2. Wall guided combustion system
3. Spray guided combustion system.
4. Comparisons of Nozzle types.
5. Explain Exhaust gas treatment.

**TUTORIAL - 3**

1. State historical background of turbo charging for high specific output.
2. What is the problem associated with turbo charging the SI engine?
3. What is the impact of turbo charging on pollutants emissions?
4. State advantages of combining direct injection and turbo charging in SI engine.

#### **TUTORIAL - 4**

1. Explain fundamentals of auto ignition.
2. What is the role of auto ignition in gasoline engine?
3. Explain operation of two stroke cycle engine with auto ignition.
4. Explain operation of four stroke cycle engine with auto ignition.

#### **TUTORIAL - 5**

1. What is HCCI engine and explain its fundamentals.
2. Explain gasoline HCCI engine.
3. Explain HCCI diesel engine.
4. What are the regimes of HCCI and conventional CI engine operation?
5. Explain emission characteristics of HCCI diesel and HCCI petrol engine.