

Module No. 3: Introduction to Engines
No. of weeks / credits 2

Week 1

- **Heat to Motive Power**
 - Introduction
 - Steam Engines
 - Principles of Heat Engines
 - Steam & Steam Turbines
 - Power Station Turbines

Week 2

- **Oil and Gas Engines**
 - Introduction
 - Petrol and Diesel Engines
 - Petrol /Spark Ignition Engine
 - Aircraft Petrol Engines
 - Diesel Engine
 - Diesel Power for Ships, Road, Rail & Air
 - Emissions from Petrol engines
 - Reducing Pollution
 - Gas Turbine
 - Stirling Engine

Course title: Engines				
Course code: DRE 117		No. of credits: 2	L-T-P: 00-00-00	Learning hours:
Pre-requisite course code and title (if any): NA				
Department: Department of Energy and Environment				
Course coordinator: Dr Priyanka kaushal			Course instructor: Dr Subodh Kumar Jain	
Contact details:				
Course type: Core			Course offered in: Semester 1	
Course description:				
Course objectives:				
Course contents				
Week	Topic	L	T	P
1	<ul style="list-style-type: none"> • Heat to Motive Power <ul style="list-style-type: none"> ✓ Formation of coal Introduction ✓ Steam Engines ✓ Principles of Heat Engines ✓ Steam & Steam Turbines ✓ Power Station Turbines 			
2	<ul style="list-style-type: none"> • Oil and Gas Engines <ul style="list-style-type: none"> ✓ Exploration Techniques Introduction ✓ Petrol and Diesel Engines ✓ Petrol /Spark Ignition Engine ✓ Aircraft Petrol Engines ✓ Diesel Engine ✓ Diesel Power for Ships, Road, Rail & Air ✓ Emissions from Petrol engines ✓ Reducing Pollution ✓ Gas Turbine ✓ Stirling Engine 			
	Total	--	--	--
Evaluation criteria:				
Assignment : 60%				
Final Exam : 40%				
Learning outcomes:				
To understand the basics of management principles and organization behaviour.				
To understand the optimization of financial resource allocation and its use.				
To understand the business perspective of the emerging section of renewable energy.				

Pedagogical approach:

A combination of class-room interactions, tutorials, assignments and projects.

Reference Books:

- Renewable Energy, ISBN 0-12-497451-1, Elsevier Academic Press

Additional information (if any):NA**Student responsibilities:**

Attendance, feedback, discipline: as per university rules.