**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK**
**DEPARTMENT OF MECHANICAL ENGINEERING**

# LESSON PLAN

SUBJECT: THERMAL ENGINEERING 2

FACULTY:MRS.SUSHREE PRIYADARSHINI

ACCADEMIC SESSION: 2022-23

SEMESTER:4TH

SEC:B

13/02/23

Sd/-

H O D (MechEngg.)

## LESSON PLAN

| | | |
|---|---|---|
| Discipline:Mechanical Engg. | Semester:4TH SEC-B | Name of the teaching faculty:Sushree Priyadarshini |
| Subject:THERMAL ENGG.2 | No of days/per week class allotted:4 | Semester from date:14/02/2023 to date:23/05/2023<br><br>No. of weeks-14 |
| Week | Class day | Theory/practical topics |
| 1st | 14/02/2023 | Introduction to thermal engineering-II<br>Performance of IC engine |
| | 16/02/2023 | 1.1derive mechanical efficiency ,indicated thermal efficiency, relative efficiency |
| | 17/02/2023 | 1.1brake thermal efficiency, overall efficiency, mean effective pressure and specific fuel consumption |
| 2nd | 21/02/2023 | 1.2define air-fuel ratio and calorific value of fuel<br>1.3 work out problems to determine efficiencies and specific fuel consumption |
| | 23/02/2023 | 1.3 work out problems to determine efficiencies and specific fuel consumption |
| | 24/02/2023 | 1.3 work out problems to determine efficiencies and specific fuel consumption |
| | 25/02/2023 | 2.1explain function of compressor and industrial uses of compressed air |

| | | |
|---|---|---|
| 3rd | 28/02/2023 | 2.2 classify air compressor and principle of operation |
| | 02/03/2023 | 2.3 describe the parts of reciprocating air compressor<br>2.3describe the principle of reciprocating air compressor |
| | 03/03/2023 | 2.4explain the terminology of reciprocating compressor such as bore,stroke,pressureratio,free air delivered and volumetric efficiency |
| | 04/03/2023 | 2.5 derive the workdone of single stage compressor with or without clearance |
| 4th | 09/03/2023 | 2.5 derive the workdone of single stage compressor with or without clearance |
| | 10/03/2023 | 2.5 derive the workdone of two stage compressor with or without clearance |
| | 11/03/2023 | 2.6 solve simple problems |
| 5th | 14/03/2023 | 2.6 solve simple problems |
| | 16/03/2023 | Class test-1 |
| | 17/03/2023 | 3.1difference between gas and vapour<br>3.2 formation of steam |
| | 18/03/2023 | 3.3 presentation of P-V,T-S H-S and T-H diagram |
| 6th | 21/03/2023 | 3.4 definition and properties of steam |
| | 23/03/2023 | 3.5 use of steam table and mollier chart for finding unknown properties |
| | 24/03/2023 | 3.6 nonflow and flow process of vapour<br>3.7 P-V,T-S AND H-S diagram |

| | | |
|---|---|---|
| | 25/03/2023 | 3.8 determine the changes in properties and solve simple numericals |
| 7th | 28/03/2023 | 4.1 classification and types of boiler |
| | 31/03/2023 | 4.2 important terms for boiler<br>4.3comparision between fire tube and water tube boiler |
| | 01/04/2023 | 4.4 description and working of common boilers(Cochran,Lancashire,babcock and wilcox boiler) |
| 8th | 04/04/2023 | 4.4description and working of common boilers(Cochran,Lancashire,babcock and wilcox boiler) |
| | 06/04/2023 | 4.5 boiler draught (forced,induced and balanced) |
| | 08/04/2023 | 4.6 boiler mounting and accessories |
| 9th | 11/04/2023 | 5.1 carnot cycle with vapour<br>5.2 derive work and efficiency of the cycle |
| | 13/04/2023 | 5.3 rankine cycle<br>5.3.1 representation in P-V,T-S and H-S diagram |
| 10th | 18/04/2023 | 5.3.2 derive work and efficiency of the cycle<br>5.3.3 effect of various end conditions in rankine cycle |
| | 20/04/2023 | 5.3.3 effect of various end conditions in rankine cycle |
| | 21/04/2023 | 5.3.4 reheat and regeneration cycle |
| 11th | 25/04/2023 | Internal assessment |
| | 27/04/2023 | 5.4 solve simple numerical on carnot vapour cycle and rankine cycle |
| | 28/04/2023 | 6.1 modes of heat transfer(conduction ,convection and radiation) |
| | 29/04/2023 | 6.2 fourier law of heat conduction and thermal conductivity 6.3newtons law of cooling |

| | | |
|---|---|---|
| 12th | 02/05/2023 | 6.3newtons law of cooling |
| | 04/05/2023 | 6.4radiation heat transfer<br>Black body radiation,emissivity,absorpvity and transmissivity<br>Class test-2 |
| | 06/05/2023 | Black body radiation,emissivity,absorpvity and transmissivity<br>Class test-2 |
| 13th | 09/05/2023 | Class test-2 |
| | 11/05/2023 | revision |
| | 12/05/2023 | revision |
| | 13/05/2023 | revision |
| 14th | 16/05/2023 | Previous year question discussion |
| | 18/05/2023 | Previous year question discussion |
| | 20/05/2023 | Previous year question discussion |