Lesson Plan

Name of the Faculty : Neeraj sangwan

Discipline :Mechanical Engg.

Semester :6th

Subject :PMMH

Lesson plan duration :16 weeks (from 06 March, 2023 to 23 JUNE, 2023)

|  |  |  |
| --- | --- | --- |
| Week | Theory | |
| Lecture Day | Topic (including assignments /tests) |
| 1st Week | 1st | Necessity and advantages of testing, repair and maintenance |
| 2nd | common instruments required for testing, significance of B-T curve in life span of machine tool |
| 3rd | Fits and tolerances – common fits and tolerances used for various machine parts |
| Week 2 | 1st | Location, layout of machines in Plant Layout, Principles of Plant layout, types of plant layout and positioning of machines, grouping of machines. |
| 2nd | Foundation – types of foundation |
| 3rd | types of foundation bolts |
| Week 3 | 1st | erection and leveling, grouting  Vibration, damping |
| 2nd | vibration isolation – methods of isolation, anti vibration mounts |
| 3rd | Testing equipment – dial gauge, mandrel, spirit level, straight edge, auto collimator Recalibration of measuring instruments like vernier calliper |
| Week 4 | 1st | Testing methods – geometrical/alignment test |
| 2nd | performance test, testing under load |
| 3rd | Definition, advantages, limitations, functions and types of maintenance organisation. |
| Week 5 | 1st | Types ofmaintenance viz. emergency, preventive |
| 2nd | breakdown/corrective, predictive |
| 3rd | Introduction to computerized maintenance record like facility register, maintenance request. |
| Week 6 | 1st | ISO standards for maintenance documentation  . |
| 2nd | Introduction to machine history card – purpose and advantages |
| 3rd | Preparation of scheduled yearly plan for preventive maintenance |
| Week 7 | 1st | difference of work content of servicing |
| 2nd | repairs and overhauling. MTBF and MTTR. |
| 3rd | Maintainability Spare parts- Need of frequently needed spare parts |

|  |  |  |
| --- | --- | --- |
| Week 8 | 1st | Make provision of spares for parts not available in market |
| 2nd | Common parts which are prone to failure |
| 3rd | reasons of failure  Repair schedule Parts that commonly need repair such as belts |
| Week 9 | 1st | couplings, nuts, and bolts repairing the engines, compressors and boilers. |
| 2nd | Lubrication methods and periodical lubrication chart for various machines |
| 3rd | Handling and storage of lubricants, |
| Week 10 | 1st | Lubricants conditioning and disposal |
| 2nd | Lubricant and their grades needed for specific components such as gears, bearings, and chains |
| 3rd | Assignment |
| Week 11 | 1st | Test |
| 2nd | **Unit 7:** Purpose and procedure of changing oil periodically (like gear box oil) |
| 3rd | Basic principles of material handling |
| Week 12 | 1st | Basic types of material handling equipments and its characteristic |
| 2nd | Basic types of material handling equipments and its characteristic |
| 3rd | Uses and limitations, forklift trucks, |
| Week 13 | 1st | Assignment |
| 2nd | Revision |
| 3rd | Uses and limitations, forklift trucks, |
| Week 14 | 1st | Function of cutting fluid |
| 2nd | Unit load: pallet sizing and loading |
| 3rd | Difference between cutting fluid and lubricant |
| Week 15 | 1st | Conveyor models, AGV Systems, |
| 2nd | Automated Storage & Retrieval System (ASRS), Carousels, |
| 3rd | Revision |
| Week 16 | 1st | Revision |
|  | 2nd | Revision |
|  | 3rd | Previous years question papers |