Lesson Plan

Name of the Faculty : Sh. Ishu Monga

Discipline : Mechanical Engg.

Semester : 6th

Subject : PMMH

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| Week | Theory | |
| Lecture Day | Necessity and advantages of testing, repair and maintenance |
| 1st Week | 1st | common instruments required for testing, significance of B-T curve in life span of machine tool |
| 2nd | Acceptance test for machine tools |
| 3rd | Economic aspects, manpower planning and materials management |
| 4th | 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 |
| 2nd | types of plant layout and positioning of machines, grouping of machines. |
| 3rd | Foundation – types of foundation, various considerations for machine foundations |
| 4th | foundation plan, types of foundation bolts |
| Week 3 | 1st | erection and leveling, grouting |
| 2nd | Vibration, damping, vibration isolation |
| 3rd | methods of isolation, anti vibration mounts |
| 4th | Testing equipment – dial gauge, mandrel, spirit level |
| Week 4 | 1st | straight edge, auto collimator Recalibration of measuring instruments like vernier calliper |
| 2nd | Testing methods – geometrical/alignment test |
| 3rd | performance test, testing under load, |
| 4th | run test, vibrations, noise |
| Week 5 | 1st | Definition, advantages, limitations, functions and types of maintenance organisation |
| 2nd | Types of maintenance viz. emergency, preventive, breakdown |
| 3rd | corrective, predictive  Introduction to computerized maintenance record like facility register |
| 4th | 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 |
| 4th | difference of work content of servicing, repairs and overhauling. MTBF and MTTR |
| Week 7 | 1st | Maintainability Spare parts- Need of frequently needed spare parts inventory |
| 2nd | Make provision of  spares for parts not available in market |
| 3rd | Common parts which are prone to failure |
| 4th | reasons of failure |
| Week 8 | 1st | Repair schedule Parts that commonly need repair such as belts, |
| 2nd | couplings, nuts |
| 3rd | And bolts repairing the engines |
| 4th | compressors |
| Week 9 | 1st | boilers. |
| 2nd | Lubrication methods and periodical lubrication chart for various machines (daily, weekly, monthly ) |
| 3rd | Handling and storage of lubricants |
| 4th | Lubricants conditioning and disposal |
| Week 10 | 1st | Lubricant and their grades needed for specific components such as gears |
| 2nd | bearings, and chains |
| 3rd | Purpose and procedure of changing oil periodically (like gear box oil) |
| 4th | **Material Handling Systems** |
| Week 11 | 1st | Basic principles of material handling |
| 2nd | Basic types of material handling equipments |
| 3rd | and its characteristic, |
| 4th | Uses and limitations |
| Week 12 | 1st | forklift trucks |
| 2nd | Selection of material |
| 3rd | handling equipment |
| 4th | Unit load: pallet sizing and loading |
| Week 13 | 1st | Conveyor models |
| 2nd | AGV Systems |
| 3rd | Automated Storage & Retrieval System (ASRS), |
| 4th | Carousels, |
| Week 14 | 1st | Revision |
| 2nd | Revision |
| 3rd | Revision |
| 4th | Revision |
| Week 15 | 1st | Revision |
| 2nd | Revision |
| 3rd | Revision |
| 4th | Revision |