**RJLB Govt. Polytechnic, Loharu**

***LECTURE PLAN (FEB.2024-JUNE. 2024)***

**BRANCH:** ME **SEMESTER: 6th**

**SUBJECT:** PMMH

**NAME OF FACULTY**: RAVI KANT

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| **S.****No.** | **Name of Topic** | **No. of Lectures** |
| **Chapter -1- Introduction** |
| 1 | Necessity and advantages of testing, repair and maintenance, common instruments | 1 |
| 2 | required for testing, significance of B-T curve in life span of machine tool, | 2 |
| 3 | Acceptance test for machine tools, Economic aspects, manpower planning and | 1 |
| 4 | materials management | 1 |
| 5 | Fits and tolerances – common fits and tolerances used for various machine parts | 2 |
| 6 | Necessity and advantages of testing, repair and maintenance, common instruments | 2 |
| **Chapter -2- Plant Layout, Erection and Commissioning of Machines (Installation)** |
| 7 | Location, layout of machines in Plant Layout, Principles of Plant layout, | 2 |
| 8 | types of plant layout and positioning of machines | 2 |
| 9 | grouping of machines | 1 |
| 10 | Foundation – types of foundation | 2 |
| 11 | various considerations for machine foundations | 1 |
| 12 | foundation plan, types of foundation bolts | 1 |
| 13 | erection and leveling, grouting | 1 |
| 14 | Vibration, damping | 1 |
| 15 | vibration isolation – methods of isolation | 1 |
| 16 | anti vibration mounts | 1 |
| **Chapter -3- Testing of Machines** |
| 17 | Testing equipment – dial gauge, mandrel, spirit level, straight edge | 2 |
| 18 | auto collimator, Recalibration of measuring instruments like vernier calliper | 2 |
| 19 | Testing methods – geometrical/alignment test | 2 |
| 20 | performance test, testing under load | 2 |
| 21 | run test, vibrations, noise | 1 |
| **Chapter -4- Maintenance** |
| 22 | Definition, advantages, limitations, functions and types of maintenance organisation. | 3 |
| 23 | Types of maintenance viz. emergency, preventive, breakdown/corrective, predictive | 2 |
| 24 | Introduction to computerized maintenance record like facility register,  | 2 |
| 25 | Maintenance request. | 1 |
| 26 | ISO standards for maintenance documentation | 1 |
| 27 | Introduction to machine history card – purpose and advantages | 2 |
| 28 | Preparation of scheduled yearly plan for preventive maintenance, difference of work | 2 |
| 29 | Content of servicing, repairs and overhauling. MTBF and MTTR. Maintainability | 1 |
| 30 | Spare parts- Need of frequently needed spare parts inventory,  | 1 |
| 31 | Make provision of spares for parts not available in market | 1 |
| **Chapter -5- Repairing** |
| 32 | Common parts which are prone to failure | 2 |
| 33 | Repair schedule Parts that commonly need repair such as belts | 2 |
| 34 | bolts repairing the engines | 1 |
| **Chapter -6- Lubrication Systems** |
| 35 | Lubrication methods and periodical lubrication chart for various machines (daily, weekly, monthly ) | 2 |
| 36 | Handling and storage of lubricants | 1 |
| 37 | Lubricants conditioning and disposal | 1 |
| 38 | Lubricant and their grades needed for specific components such as gears, bearings, and chains | 3 |
| 39 | Purpose and procedure of changing oil periodically (like gear box oil) | 2 |
| **Chapter -7- Material Handling Systems** |
| 40 | Basic principles of material handling,  | 1 |
| 41 | Basic types of material handling equipments and its characteristic | 2 |
| 42 | Uses and limitations, forklift trucks, Selection of material handling equipment, | 1 |
| 43 | Unit load: pallet sizing and loading. | 1 |
| 44 | Conveyor models, AGV Systems, | 1 |
| 45 | Automated Storage & Retrieval System (ASRS), Carousels, | 1 |