# Lesson Plan: Industrial Engineering – Production VI (PEC 603)

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|  | **MODUL - 01** | 05 |  |
| **MODUL - 01** | **Introduction to Industrial Engineering:**   * Industrial Engineering in the modern world techniques and objectives of Industrial Engineering. | L1 |  |
| **Production and Productivity:**   * Definition and comparison * productivity measurements * factors influencing productivity * Productivity Improvement techniques likes * 5s, * Poka-Yoke * Kaizen * Kanban * Quality Improvement Techniques like - QFD, FMEA, Ishikawa diagram, SMED, SQC tools. | L2, L3, L4, L5 |  |
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|  | **MODULE - 02** | 07 |  |
| **MODULE - 02** | **Work System Design:**   * Inter disciplinary nature of ergonomics * modern ergonomics, * human performance * information processing * factors affecting human performance * physical workload and energy expenditure * Workspace Design * Anthropometry, * workspace design for standing and seated workers * Arrangements of components within a physical space * Application of Ergonomics in automobiles | L6, L7, L8, L9, L10 |  |
| **Job Evaluation and Wage Plan:**   * Objective * Methods of job evaluation * job evaluation procedure * merit rating (performance appraisal) * method of merit rating * wage and wage incentive plans | L11, L12 |  |
|  | **Module - 03** | **06** |  |
| **Module - 03** | **Value Engineering and Value Analysis:**   * Significance of Value Engineering * Distinction between value engineering & value analysis * Steps in value engineering & analysis * function analysis system techniques- FAST diagram with Case studies. | L13, L14, L15, L16,L17,L18 |  |
|  | **Module - 04** | **07** |  |
| **Module - 04** | **Facility Location:**   * The need for location decision * Procedure for making location decisions * Factors affecting location decisions * Methods of evaluating location decisions. | L19, L20, |  |
| **Facility Layout / Plant Layout:**   * Types of Layout * Significance and Factors influencing layout choices * Principles of Plant layout * Concepts of Group Technology and Cellular Manufacturing * Computerized Layout Techniques. | L21,L22, L23 |  |
|  | **Materials Handling**:   * Function * Importance and Objectives of Material Handling * Material handling Principles * Types of Material Handling Systems * Selection of Material Handling Equipment | L24, L25 |  |
|  | **Module - 05** | **08** |  |
| **Module - 05** | **Inventory Management:**   * Nature * Importance * Classification and Functions of Inventory * Inventory Costs * Importance of Inventory Management * Inventory Control System for Dependent Demand and Independent Demand Inventory Ordering Systems * Inventory Control subject to Known Demand * The EOQ Model * Extension to Finite Production Rate, * Quantity Discount Model. | L26, L27, L28, L29, L30, L31, L32, L33 |  |
|  | **Module - 06** | **06** |  |
| **Module - 06** | Material Requirement Planning (MRP)  Manufacturing Resource Planning (MRP II)  Enterprise Resource Planning (ERP)  Just in Time Manufacturing  Lean Production  Agile Manufacturing  Line Balancing  Sustainable Production and Green Manufacturing. | L34, L35, L36, L37, L38, L39 |  |