# 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 ManufacturingLean ProductionAgile ManufacturingLine BalancingSustainable Production and Green Manufacturing. | L34, L35, L36, L37, L38, L39 |  |