Facilities & Location Management

Course Objectives

The objective of this course is to develop an in-depth understanding of product, process and schedule design as well as facilities location, layout design and material handling. The course is expected to provide a balanced exposure in facility management, layout design and material handling.

Syllabus

Production Facilities, Location, Planning Design, Maintenance, Production System, Machine Selection, Automation, Layout, Industrial Safety, Preventive Maintenance.

Expected Outcome

After successful completion of the course, the students will be able to define and analyse product, process and schedule design interactions by studying the functions involved in the product development cycle.

References

1. Tomkins, J. A;White, J A, Bozer, Y.A and Tanchoco.J, Facilities Planning, N J: John Wiley & Sons, 2013

2. McGinnis, F, Richard L Francis and White, J A, Facilities Layout and Location: An Analytical Approach, Pearson Education, 2015

3. G.K. Agarwal, Plant Layout and Material Handling, Jain Brother, 2008

4. Stevenson, W.J., Operations Management, McGraw Hill Education India Private Limited, 2015

5. Fred E. Meyers and Matthew P. Stephens, Manufacturing Facilities Design and Material Handling, Purdue University Press, 2013

6. Eric, Tiecholz, Facility Design and Management Handbook, McGraw-Hill Professional, 2001

COURSE PLAN

1 Facilities Management: Principles and Theories, Organisational Models, Different Types of Facilities Layout – Product, Process, Bench Marking, Maturing, Survey Facilities and Asset Management, Facilities Asset Management, Life Cycle Analysis, different types of facilities – Product, Process, combination, fixed, and cellular layouts. Production facilities location decisions factors; warehouse location decision methods.

2 Business Transformation and Facilities Management: Changing Environment, Business Transformation process, Three Key Issues of Facilities Management Transformation, Three Obstacles of Facilities Management Transformation, comparison of layouts and the factors affecting the layout decisions

First Internal Examination

3 Facilities Condition Assessment: Facilities Audit, Technology for Capital Planning, Alternative Work Places, Rethinking Office 2.0, Business Centres, Changing Political and Economic Boundaries, Changing Technology, Changing Social and Environmental Awareness, Sustainable Designs- Occupant Health and Comfort, warehousing and employee services – office layout techniques and space requirements, environmental aspects like lighting, ventilation, dust control, humidity.

4 Smart and Intelligent Buildings: Smart Building – Beyond Technology, Network and Central Management Systems, Smart Interior Systems, Smart HVAC Systems, Smart Lighting System, Lighting Ergonomics, Interior Lighting, Exterior Lighting, Lighting Analysis, Space Management, Energy in building design – Energy efficient and environment friendly building – Thermal phenomena – thermal comfort – Indoor Air quality – Climate, sun and Solar radiation, Psychometrics – passive heating and cooling systems .

Second Internal Examination

5 Energy Management & Industrial Safety: Energy management, Energy audit – Types of Energy audit – Analysis of results – Energy flow diagram – Energy Consumption, Unit Production – Identification of wastage Priority of conservative measures, Maintenance of energy management programme, Hazards and Health Standards, NIOSH Guidelines. Stress & Preventions, Pollution and Environmental Consideration, Occupational Safety.

Final Examination