

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: 2

Mechanical Engineering (Advanced Manufacturing Systems)

Subject Name: **World Class Manufacturing (Major Elective II)**

Subject Code: **1725004**

Sr_No	Content
1.	World-Class Manufacturing (WCM): Manufacturing Excellence and Competitiveness, Meaning of World-class, Competing in World markets, WCM Techniques, Review of frameworks for WCM, Justification of WCM
2.	An overview of Manufacturing Strategy: Manufacturing strategy concepts and domains. Incorporating manufacturing perspective in corporate Strategy, Trade-offs in manufacturing objectives. Creating competitive advantages through manufacturing strategy. Competitiveness models. The process of manufacturing strategy formulation and implementation, Manufacturing strategy – examples from the industry (Indian and international context).
3.	Introduction to Lean Manufacturing: Elements of Lean manufacturing : Stability, Standardized work, Just in time, Jidoka, Hoshin Planning, The culture of lean, Implementation of Lean manufacturing : Implementation framework for the Lean manufacturing, Case Study
4.	Total Productive Maintenance (TPM) : An overview of various maintenance systems, Evolution of TPM, Productivity and TPM, OEE, TPM and TQC, Small Group Activities, Pillars of TQM, Kobetsu-Kaizen (Continuous Improvement), Jishu-Hozen (Autonomous maintenance), Planned Maintenance System, Skill upgrade training, Initial control (Equipment Life cycle management), Hinshitsu-Hozen (Quality Maintenance), Office TPM, Total safety management, Implementation, 5s, Case Study
5.	Total Quality Management (TQM) : Definition, Understanding quality, Evolution of TQM, Framework for TQM, Commitment and leadership, Customer satisfaction, Employee involvement, Continuous process improvement, Supplier partnership, Performance measures, Formulation and implementation of TQM, Case Study
6.	Other features of WCM : Supply Chain Management & key issues in SCM, Role of Information system in WCM, Knowledge management - Introduction, Benefits, Tools and techniques, Study of various performance measures in world class organization, Human Resource Dimensions in WCM

Text Books:

1. Jim Todd, "World-class Manufacturing", McGraw Hill, London, 1995

Reference Books:

1. Schonberger R.J., "World Class Manufacturing - The Lesson of Simplicity", Free Press, 1986
2. Marcus, A A., Management strategy: achieving sustained competitive advantage, New York: McGraw-Hill/Irwin, 2011.
3. Voss C.A., "Manufacturing Strategy: Process and Content", Chapman & Hall, London, 1992.
4. Pascal, D., "Lean production simplified", 2nd Edition, Productivity Press, 2007
5. Nakajima, S., "Introduction to Total Productive Maintenance", Productivity Press, 1988.
6. Besterfield D. H., et al., "Total Quality Management", Pearson Education, 1999.
7. Mohanty R.P. and Deshmukh S.G., "Advanced Operations Management", Pearson Education, 2003.