



BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, Pilani
Pilani Campus

INSTRUCTION DIVISION
FIRST SEMESTER 2016-2017
Course Handout Part II

Date: 02/08/2016

In addition to Part-I (General Handout for all courses appended to the timetable) this portion gives further specific details regarding the course.

Course No : MSE G521
Course Title : WORLD CLASS MANUFACTURING
Instructor-in-charge : ABHIJEET K. DIGALWAR
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1. Course Description

The world-class manufacturing challenge, Developing world-class manufacturing strategy, Just-in-time, Total quality, Total employee involvement, World-class information systems, Managing the change, Methods and procedures: improved brainstorming methods, using the check lists, total quality-the first steps, getting people involved, Monitoring the world-class performance.

2. Scope and objectives of the course:

- To promote a good foundation in World-class Manufacturing,
- To explain the various concepts and philosophies in more detail for the design strategies for World-class Manufacturing,
- To develop skills for implementation of World-class Manufacturing concepts and philosophies

3. Text Books

- T1. Jim Todd, "World-class Manufacturing", McGraw Hill, London, 1995
- T2. Pascal, D., "Lean production simplified", 2nd Edition, Productivity Press, 2007.
- T3. Nicholas, John M., "Competitive Manufacturing Management", Tata McGraw Hill Education Pvt. Ltd. New Delhi, 2012.
- T4. Sahay, B.S., Saxena, K.B.C. and Kumar, A., World-class Manufacturing- A Strategic Perspective, Macmillan India Limited, New Delhi, 2005.

4. Reference Books

- R1. Voss C.A., "Manufacturing Strategy: Process and Content", Chapman & Hall, London, 1992.
- R2. Besterfield D. H., et al., "Total Quality Management", Pearson Education, 1999.
- R3. Nakajima, S., "Introduction to Total Productive Maintenance", Productivity Press, 1988.
- R4. "TPM Edited Notes", By Japan Institute of Plant Maintenance.



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5. Course Plan

Lecture No.	Learning Objective	Topics to be covered	Reference
1	Introduction to course	Introduction to the course, evaluation schemes etc	Handout
2-4	World Class Manufacturing	Overview of world class manufacturing, manufacturing evolution, Introduction to WCM tools and techniques, frameworks	Ch.1(T1) T2 and Research Papers
5-10	Manufacturing Strategy	Operations strategy, strategic approaches to manufacturing, Process of manufacturing strategy formulation and implementation, case studies	Ch. 1 to 8 (R1) and Research Papers
11-15	Total Quality Management	Introduction, Quality evolution, tools and techniques, principles and processes of TQM formulation and implementation, frameworks, case studies	R2 and Research Papers
16-20	Decision Making tools	Various MCDM tools, Application of MCDM in manufacturing, Simulation tools	Research papers
21-25	Total Productive Maintenance	Introduction to various maintenance system, overview of TPM, pillars, Reliability, maintainability, MTBF, MTTR, OEE, TPM implementation frameworks, case studies	T3, R3, R4 and Research Papers
26-33	Lean Manufacturing	Introduction, elements, tools and techniques, implementation frameworks, case studies	T2 and Research papers
34-40	Other issues of WCM	Innovative product planning and development, production planning and control, supply chain management, Knowledge Management, IT, Green Manufacturing/Sustainable Manufacturing, Performance Measurement Systems,	Research Papers





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6. Evaluation Scheme

Component	Duration	Weightage (%)	Date & Time	Remarks
Mid Sem Test	90 mins.	30	5/10 4:00 - 5:30 PM	CB
Case studies /Assignments / term paper/ seminars/ Project Reports/Class Tests		30	Will be announced in the class	No makeup will be provided for these components
Comprehensive Examination	3 hrs	40	7/12 AN	CB/OB

7. **Mid-semester grading:** It will be announced normally in the month of October. It is done in the same manner as that of the final grading

8. **Chamber Consultation Hour:** To be announced in the class

9. **Notices:** All notices related to this course will be displayed on the Mechanical Engineering Notice Board only.

Instructor-in-charge
MSE G521



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