TOYOTA PRODUCTION SYSTEM

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TYPE OF COURSE : Rerun I Elective I PG/UG
COURSE DURATION : 8 weeks (23 Aug’21 - 15 Oct’21)
EXAM DATE : 23 Oct 2021

PRE-REQUISITES : Production and Operations Management

INTENDED AUDIENCE : Industry people who wants to use “operations” for competitive advantage,
Students doing research in operations management, Students doing Masters and Bachelors
degrees in area of operations management, Industrial engineering etc, Professionals who are
interested in knowing the best practices in operations.

INDUSTRIES APPLICABLE TO : This course will be highly useful for manufacturing
organizations. Particularly companies such as Hero, Maruti, BHEL, Rockman, Bajaj, Tata etc.

COURSE OUTLINE :
Manufacturing is one of the important activity for wealth generation. Countries like China, Thailand,
Vietnam etc are creating an enabling environment for developing these nations as major industrial
ones. Therefore, there is an increasing interest in manufacturing activities. Toyota car company at
Japan is a very interesting case study to learn many things to make manufacturing competitive. Toyota
consistently raises the bar for manufacturing, product development, and process excellence. The result
is an amazing business success story: steadily taking market share from price cutting competitors,
earning far more profit than any other automaker, and winning the praise of business leaders
worldwide. The proposed course will discuss various aspects of Toyota’s approach and will also focus
on achieving sustainability through excellence in operations.

ABOUT INSTRUCTOR :
Prof. Rajat Agrawal is a member of faculty (Associate Professor) at Department of Management
Studies, Indian Institute of Technology, Roorkee. He is also associate faculty member at Center
of Excellence for Disaster Mitigation and Management and Center of Excellence for
Transportation Management, IIT Roorkee. He administers various initiatives of IIT Roorkee in the field
of IPR, incubation and entrepreneurship in different capacities. He initiated incubation centre at IIT
Roorkee. He is co-ordinator of Design innovation centre at IIT Roorkee.

COURSE PLAN :
Week 1: Manufacturing Excellence, Global Environment, Production System, Operations Strategy, The
Heart of the TPS: Eliminating Waste
Week 2: Principles of Toyota Way, Culture Behind Toyota Way, Toyota Way in Action, Long Term
Philosophy, Create Continuous Flow
Week 3: Pull System, Leveling Workload, Get Quality Right the first time, Standardization of Task, Use of
Visual Control
Week 4: Use of Reliable Technology, Role of Leaders in Manufacturing Philosophy, Developing
Exceptional Teams, Challenge & Respect Extended Networks, See yourself to understand the situation
Week 5: Developing decisions with Consensus, Becoming Learning Organization, Becoming a Learning
Organization: Continuous Improvement, Using Toyota Way for other Organization (Service & Technical),
Lean Manufacturing
Week 6: Lean Vs Agile Manufacturing, Sustainable Manufacturing-I, Sustainable Manufacturing-II,
Flexible Manufacturing System, Benchmarking
Week 7: Cultural Issues in Lean, Overview of Lean implementation, Significance of Lead time,
Techniques to reduce LT, Value Stream Mapping
Week 8: KANBAN Approach, KANBAN Calculation-I, KANBAN Calculation-II, Theory of Constraints,
Different Business Excellence Models