



# Certificate

## Executive Education Program

We hereby confirm that

**Jon DeBoer**

has successfully completed the certification requirements for the

### **TUM Lean Six Sigma Yellow Belt**

through the successful completion of the 22-week Professional Series of courses on the edX platform, including 30 hours of lecture, weekly quizzes, and guided on-line case studies and projects,

### **Six Sigma and Lean: Quantitative Tools for Quality and Productivity**

Covering the topics

#### **Lean**

- History of Lean
- Continuous Improvement (Kaizen)
- 8D Problem Solving
- Value Stream Mapping
- Fishbone, 5 Whys, Cause & Effect
- 3Ms: Mura, Muri, Muda
- 7 Wastes of Lean
- Poka Yoke Solutions
- Visual Management
- Workplace Organization – 5S
- Capacity Analysis, Littles Law
- Queuing Theory
- Setups and Batches
- Mixed Model production
- JIT/Pull Systems
- Scheduling Pull Systems
- Kanban
- Total Productive Maintenance
- Single Minute Exchange of Die
- Overall Equipment Effectiveness

#### **Six Sigma**

- Project Identification and Definition
- SIPOC
- Customer Expectations, VOC, Kano
- Critical-to-Quality Parameters
- Process Mapping/ Flow Diagram
- MSA, Gage R&R,
- Probability Distributions
- Sampling plans
- Descriptive Statistics
- Plots (Pareto, Scatter, Time Series)
- Process Capability: Yield, ppm, DPMO, Sigma Level
- Inductive Statistics: CI, Hyp test
- Linear Regression/ DOE/ ANOVA
- Failure Mode and Effect Analysis
- SPC, Control Charts
- Control and Response Plan
- Design for Six Sigma
- Tolerance Design

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