SIX SIGMA

TYPE OF COURSE: Rerun | Elective | UG/PG

COURSE DURATION: 12 weeks (18 Jan' 21 - 09 Apr' 21)

EXAM DATE: 25 Apr 2021

PRE-REQUISITES: Statistics

INTENDED AUDIENCE: Mechanical Engineering, MBA, Industrial Engineering

INDUSTRIES APPLICABLE TO: Manufacturing and Service Industry

COURSE OUTLINE:
The course on Six-Sigma will focus on detailed strategic and operational issues of process improvement and variation reduction. Six-sigma is a measure of quality that strives for near perfection. It is a disciplined, data-driven approach for eliminating defects (driving towards six standard deviations between the mean and the nearest specification limit) in any process—from manufacturing to transactional and from product to service. A Six-sigma defect is anything outside of customer specifications. To be tagged Six Sigma, a process must not produce more than 3.4 defects per million opportunities. Six-sigma employs a systematic approach of DMAIC (Define, Measure, Analyze, Improve and Control) for the process improvement. This course will provide a detailed understanding on various issues specific to each phase of DMAIC.

ABOUT INSTRUCTOR:
Dr. Jitesh J. Thakkar is a Professor at National Rail and Transportation Institute (NRTI), Vadodara – India’s first University dedicated in the field of Rail and Transportation education. He has served as a faculty at Department of Industrial and Systems Engineering, IIT Kharagpur for 10 years. He has professional experience of more than 20 years. He holds a Ph.D in Supply Chain Management from IIT Delhi, M.Tech. in Industrial Engineering from IIT Delhi and Bachelors of Engineering in Mechanical Engineering conferred with Gold Medal from one of the oldest Government Engineering College - Birla Vishvakarma Mahavidyalaya Engineering College, Sardar Patel University. His areas of interests include Transportation Management, Logistics and Supply Chain Management, Project Management, Service Operations Management, Six Sigma, Lean Manufacturing, Optimization, Statistical Modeling and System Dynamics. He has supervised 14 Ph.D and 80 B.Tech./M.Tech. projects at IIT Kharagpur. He is a productive researcher with H-index 24 and 70 research papers published in SCI/SCOPUS listed journals. He has extensively published in the high impact factor international journals such as International Journal of Production Economics, Transportation Research (Part- E), International Journal of Production Research, Computers and Industrial Engineering, Production Planning and Control, Expert Systems with Applications, Journal of Cleaner Production. He has published two books – Structural Equation Modeling and Project Management with Springer. He has executed more than 5.0 crore rupees of research and consultancy projects. He has has extended training/consulting to various organizations such as L&T, DRDO, Food Corporation of India, Neyveli Lignite Corporation, Tata Steel, Tata Hitachi, Essar Steel, Ordnance Factory, Lakshmi Machine Works Ltd., Godrej, Qatar Chemical. His online course on “Six Sigma” offered by NPTEL has been attended by more than 20,000 University students and Industry professionals in last five years. He has delivered more than 100 invited sessions at various reputed platforms. He has been invited as a faculty expert by IIT Kanpur, IIT Madras, IIM Indore, NITIE Mumbai, NIT Surat, NIT Trichy, IRMA, AMA, BCCI Kolkata, L&T-PMI.

COURSE PLAN:

Week 1: QUALITY: FUNDAMENTALS AND KEY CONCEPTS
Week 2: QUALITY: FUNDAMENTALS AND KEY CONCEPTS
Week 3: DEFINE
Week 4: MEASURE
Week 5: MEASURE, cont'd
Week 6: ANALYZE
Week 7: ANALYZE, cont'd
Week 8: IMPROVE
Week 9: IMPROVE, cont'd
Week 10: CONTROL
Week 11: CONTROL, cont'd
Week 12: SIX SIGMA IMPLEMENTATION CHALLENGES