



Quality Management & Analytics (QMA) *for* Organizational Performance Improvement

Program Description

Quality Management & Analytics (QMA) is a comprehensive quality improvement approach to help (current & future) professionals increase their organizational performance and meet demanding customer expectations by creating high quality processes for services and products. The program achieves this goal by educating students on how to improve system efficiency by reducing business process wastes and operational variations through proven systematic analytical methodologies.

Quality Management & Analytics (QMA) offers a program to enable participants to:

- 1) Enhance the organizational performance by reducing business process inefficiencies through the proven systematic quality improvement methodologies; and
- 2) Promote excellence in business decisions and operations using modern analytics tools, increasing the chance of delivering quality services and products for their customers.

Program participants will gain knowledge and skill sets in quantitative and qualitative decision making practices to solve complex business operational problems and quality issues. Intuitive data analytics tools and qualitative techniques are used to effectively deliver performance improvement solutions. Hands-on exercises and software packages are extensively utilized to help participants learn the concepts and applications in real world problems.

In summary, the QMA program aims at facilitating organizational excellence by engaging professionals in data-driven analytics decision practices. The program places emphasis on the fact organizational performance is largely defined by how business entities create, manage, and utilize data related to their business and operation processes. Participants will be knowledgeable in extracting and analyzing data from business processes and will be confident in presenting their findings.

QMA Program Structure & Contents

QMA focuses on providing solutions for managers to efficiently handle the 4 major organizational performance issues: 1) **System Variations**; 2) **System Wastes**; 3) **System Risks**; and 4) **System Predictions** by offering the following structured and specialized analytics programs.

Analytics/ Analytical Categories		Application Domains	Courses
Organizational Excellence (System Performance <u>Management</u>)	(Business Functions)	- Organizational Decisions <Integrated Functional Decisions>	Ind. Study
	(Operational Functions)	- Quality Management & Project Management <Operational Excellence & Lean Six Sigma >	TEC439
Exploratory Analytics (System Performance <u>Description</u>)		- Process Analytics <Process Mining>	TEC439
		- Insight Analytics <Visual Mining>	TEC437
Predictive Analytics (System Performance <u>Prediction</u>)	(Inductive Prediction)	- Predictive Analytics <Machine Learning>	TEC437
	(Deductive Prediction)	- Decision Simulation <Monte-Carlo Simulation>	TEC438
		- Process Simulation <Discrete-Event Simulation>	TEC438
		- Behavior Simulation <Agent-Based Modeling>	Ind. Study
		- System Alternatives <System Dynamics>	Ind. Study
Prescriptive Analytics (System Performance <u>Solution</u>)		- System Optimization <Multi Modeling & Stochastic Method>	TEC438

Contact Info.

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Dr. Park has worked more than 20 years in the data-driven decision making areas using various quantitative techniques to improve organizational performance and related managerial decision processes by focusing on quality aspects of products, services and projects. He is well versed in “Lean Six Sigma Process Improvement Methods”, “Predictive and Prescriptive Analytics”, “Process Mining”, “Process Modeling/ Simulation”, “Uncertainty-Based Business Decision and Simulation”, “Stochastic and Statistical Optimizations”, and “Project Management”. Dr. Park has published more than 30 refereed articles in these areas and provided training and consulting for various organizations.

❖ Education

- Ph.D. (Project Management focus), Virginia Tech, Blacksburg, VA, 2002
- Master of Business Administration (MBA), Illinois State University, Normal, IL, 2015
- Master of Engineering, Korea University, Seoul, Korea, 1995
- Bachelor of Engineering, Korea University, Seoul, Korea, 1993

❖ Professional Certifications

- Six Sigma Black Belt (DMAIC & DMEDI) (certified by Caterpillar, 2012)
- LEED AP (Accredited Professional certified by USGBC, 2008)

❖ Professional Experience

- Professor, Quality Management Analytics (QMA) Program, Illinois State University, Normal, IL (2004~Present)
- Consultant in Quality Management, Lean Six Sigma, Predictive Analytics, Business Process Mining & Modeling, Decision Making, Risk Analysis, Project Management (2008 ~ Present)