

Training Program



Training formulas

❑ Company trainings

- On-site trainings
- Customized to fit your company needs

❑ Individual trainings

- Three training platforms
 - E-learning
 - Phone assistance
 - Face to face coaching
- Flexibility to maximize learning efficiency

Course description

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Lean Six Sigma Green Belt

1/2

- ❑ Module objectives, target audience and duration
 - Objectives: acquire an in-depth knowledge of lean six sigma
 - **Target audience : all Green Belt and Black Belt candidates**
 - Duration : 6 days (3 days plus 3 days)
- ❑ Module overview
 - Lean Six Sigma fundamentals and methods, selection of projects (1 day)
 - Project definition (1 day)
 - Voice of business, voice of customer, team chart
 - Mappings, Quick Wins
 - Measure of the performance (1.5 day)
 - Operational definitions and metrology
 - Choice of pertinent variables
 - Process capability and normality

Lean Six Sigma Green Belt

2/2

- Root cause analysis (1.5 days)
 - Quality tools : 5 why's, Ishikawa diagram, ...
 - Lean tools : VSM, the 7 wastes, 5S, control reduction ...
 - Statistical tools: confidence intervals, tests, data analysis
- Performance improvement (0.5 day)
 - Creativity methods and design of experiments
 - Communication and pilot production
- Performance control (0.5 day)
 - FMEA review, control plan and SPC
 - Project closure and Green Belt / Black Belt certification tests (optional)
- ❑ All along the training
 - Illustration on real company cases
 - Workshops and exercises using real data
- ❑ **Green Belt certification with project , Black Belt certification with additional training and project**

Lean Six Sigma for Managers

1/2

- Module objectives, target audience and duration
 - Objectives : acquire a basic knowledge of lean six sigma and understand roles
 - Target audience : managers of Green Belt and Black Belt candidates, six sigma champions
 - Duration : 4 days (or 2 days plus 2 days)
- Module overview
 - Lean Six Sigma fundamentals and methods (0.5 day)
 - Organizing Lean Six Sigma, role of the manager (0.5 day)
 - Project selection and selection criteria (0.5 day)
 - Project definition (0.5 day)
 - Voice of business, voice of customer, team chart
 - Mappings, quick wins
 - Measure of the performance (0.5 day)
 - Operational definitions and metrology
 - Choice of pertinent variables
 - Process capability and normality

Lean Six Sigma for Managers

2/2

- Root cause analysis (0.5 day)
 - Quality tools : 5 why's, Ishikawa diagram, ...
 - Lean tools : VSM, the 7 wastes, 5S, control reduction ...
 - Statistical tools: confidence intervals, tests, data analysis
- Performance improvement (0.5 day)
 - Creativity methods and design of experiments
 - Communication and pilot production
- Performance control (0.5 day)
 - FMEA review, control plan and SPC
- All along the training
 - Workshops and exercises using real data

FMEA

- ❑ Module objectives, target audience and duration
 - Objectives : learn and practice FMEA
 - **Target audience : people involved in risk reduction activities**
 - Duration : 2 days
- ❑ Module overview
 - The different types of FMEA's , specifics of automotive requirements
 - The FMEA methodology (1 day)
 - Process / service FMEA
 - Process description and failures modes
 - Severity, occurrence and detection, RPN indices
 - Product / design FMEA
 - Introduction to functional analysis
 - Description of the design FMEA and failures modes
 - Severity, occurrence and detection, RPN indices
 - FMEA practice (1 day)
 - **Practice FMEA on real case studies**

Statistical Process Control

❑ Module objectives, target audience and duration

- Objectives : acquire a theoretical and practical knowledge of SPC and of the different types of control charts, put SPC into practice on real cases
- **Target audience : engineers and senior technicians in manufacturing, process, product, test, R&QA areas, people in charge of an industrial or administrative process**
- Duration : 2 to 3 days

❑ Module overview

- Measurement capability
- The principles of the control chart, control limits
- The various types of control charts
 - Control charts for individuals
 - Control charts for average and range (Xbar /R type)
 - Control charts for moving average (EWMA type)
 - Control charts for attributes (p charts and c charts)
 - Control charts for nonstandard situations
- Reaction in case of out-of-control and SPC system
- **Computer-based application of a process control chart**

Team-oriented problem solving / 8D

❑ Module objectives, target audience and duration

- Objectives : acquire an in-depth knowledge of a problem-solving methodology
- **Target audience : engineers, technicians, project leaders, managers**
- Duration : 2 days

❑ Module overview

- Overview of the problem solving process
- The disciplines of problem solving
 - D0 : Get ready for the process
 - D1 : Use a team approach
 - D2 : Describe the problem
 - D3 : Implement a containment action
 - D4 : Identify the root cause
 - D5 : Identify permanent corrective actions
 - D6 : Implement permanent corrective actions
 - D7 : Identify actions to prevent recurrence
 - D8 : Congratulate the team

- **All along the training, a case study will be used for a direct application of the team-oriented problem solving concepts and tools**

Design of experiments

- ❑ Module objectives, target audience and duration
 - Objectives : acquire an in-depth knowledge of the design of experiments (DOE's), be able to design and analyze a design of experiments
 - **Target audience : people in charge of improving processes, Black Belt candidates**
 - Duration : 3 days
- ❑ Module overview
 - Historical background and advantages of designs of experiments
 - Full designs : creation of simple design of experiments, principle of equilibrium and orthogonality
 - Factorial designs : confusion of effects and interactions
 - Screening Design and other types of plans
 - Taguchi or Plackett Burman plans to treat a great number of factors
 - Introduction to « Robust Design » and to « D-Optimal » design
 - Response surface plans : process optimization and linkage with regression
 - **All along the training: computer-based exercises and examples**

Change management

- Module objectives, target audience and duration
 - Objectives : acquire an in-depth knowledge of change management applied to performance improvement projects
 - Target audience : team leaders, project leaders, Black Belt candidates
 - Duration : 2 days
- Module overview
 - Major types of change : bottom/up, top/down and project led
 - Seven keys for a successful change : management engagement, recognition, participants competencies , referent , empowerment, influence strategies and communication
 - Project management for managing changes
 - Pilot-study , planning, indicators, load
 - Risk management and industrialization
 - QCD (Quality/costs/delays) based project follow-up
 - Team-based change management workshops

Advanced Statistics

❑ Module objectives, target audience and duration

- Objectives : acquire a theoretical and practical knowledge of a number of useful statistical tools to analyze a data base. Practice those tools with the help of a software on concrete case studies
- **Target audience : process, yield, test, product, quality engineers and technicians. People dealing with data base treatment and analysis, Black Belt candidates**
- Duration : 3 days

❑ Module overview

- Bases of inference , notions of sampling , independance and normality
- Statistical tests
 - Confidence intervals and usual tests, including t-test and ANOVA tests
 - Non-parametric tests and Generalized Linear Models (non-normal data)
- Statistical modelization and other methods
 - Simple regression and multiple regression , introduction to PLS and logistic regression
 - Additional data analysis methods : Principal component analysis , classification, data mining ...

➤ **Pratice on industrial data with computer-based exercices**

The bases of quality

- Module objectives, target audience and duration
 - Objectives : acquire a broad knowledge of the main quality referentials, quality audits and quality tools
 - Target audience : people with links to quality in their daily work
 - Duration : 2 days
- Module overview
 - Early approach to quality
 - The 8 principles of management
 - The main referentials for quality, environment and safety
 - Audit for continuous improvement
 - The 5S methodology
 - The quality tools : 5 why's, is/is not, process mappings ...
 - Introduction to Lean Six Sigma
 - All along the training : workshops and exercices on real company cases

Introduction to software quality assurance

- Module objectives, target audience and duration
 - Objectives : acquire a general knowledge of the principles of software quality assurance and its implementation
 - Target audience : people with links to basic software development
 - Duration : 1 day
- Module overview
 - Processes
 - The Capability Maturity Model Integration CMMI
 - Staged representation
 - Continuous representation
 - Strategy and selection of the representation
 - Appraisal methods

Statistical software

❑ Module objectives, target audience and duration

- Objectives: learn basic statistical and graphical methods and apply using a statistical software : JMP, Minitab, Statgraphics, R
- **Target audience : people making data-based decisions**
- Duration : 1 or 2 days

❑ Module overview

- Software presentation, browsing into the menu structure
- Data management, file import
- Descriptive statistical tools
- Graphical methods , chart optimization
- Statistical tools to link together one or many variables
- Design of experiments: introduction
- Statistical process control: introduction
- **All along the training: computer-based exercices using real data**

Fundamentals of JMP Software

- ❑ Module objectives, target audience and duration
 - Objectives : acquire an in-depth knowledge of the JPM software for statistical analysis purposes
 - **Target audience : people using JMP software to manage data**
 - Duration : 3 days
- ❑ Module overview
 - Data management, file import
 - Descriptive and graphical analysis
 - Modelization and statistical tests
 - Multi-Vari analysis of important data bases
 - Survival data analysis: introduction
 - Design of experiments and test efficiency : introduction
 - Statistical process control: introduction
 - **All along the training: computer-based exercices using real data**

Industrial Metrology

- ❑ Module objectives, target audience and duration
 - Objectives : understand metrology from a normative, technical and statistical viewpoint
 - **Target audience : quality and metrology leaders, people using measurements**
 - Duration : 3 days
- ❑ Module overview
 - Importance of measurements and metrology
 - Metrology and norms
 - ISO 9001
 - ISO17020, ISO17025 (organizations performing tests and calibrations)
 - Metrology management
 - Calibration: principles and optimization
 - Estimation of measurement uncertainty : principles and application to complex measurements
 - **All along the training: computer-based metrology exercises**

Robust Design

- ❑ Module objectives, target audience and duration
 - Objectives: acquire the knowledge of robust design methods and tools
 - **Target audience : engineers in design, product or technology development, quality, project leaders**
 - Duration : 3 days
- ❑ Module overview
 - The Design For Six Sigma methodology
 - Identify
 - Design
 - Optimize
 - Verify
 - The tools for a robust design
 - The Taguchi methodology and the design of experiments
 - Signal to Noise ratio and robustness to noise factors
 - Designs of experiments for a small number of prototypes
 - **All along the training: computer-based exercises and examples**