Lean Six Sigma training & certification
Lean Six Sigma training and certification program from APMG and the Lean Six Sigma Academy.

Develop your ability to improve business processes, implement continuous improvement, reduce costs and eliminate waste.

Yellow, Orange, Green & Black Belt level certification available.
Developed in partnership with Lean Six Sigma Academy.

www.lssa.eu

Lean Six Sigma published the ‘Climbing the Mountain’ series of publications which underpin the APMG Lean Six Sigma syllabi.

APMG accredits training organizations to deliver approved supporting training courses globally.
Background

- Process and performance improvement is a key objective in modern business with organizations aiming to improve efficiency and banish wasteful practices.
- Process and performance improvement can deliver significant efficiency & cost savings.
- Lean Six Sigma is a concept that combines Lean Manufacturing (originally developed by Toyota) and Six Sigma (originally developed by Motorola).
- The focus of Lean is speed, efficiency and eliminating waste from processes. Six Sigma focuses on effectiveness and removal of errors.
- The Six Sigma statistical model and the underlying process DMAIC (Define-Measure-Analyze-Improve-Control) were developed by Motorola and later widely adopted by others such as General Electric as a quality approach for manufacturing processes.
- When implemented properly, this combination can prove a powerful management tool that can significantly improve an organization’s performance by providing a structured approach to resolving problems and enabling rapid improvements, whether in a manufacturing or service-based environment.
- Lean Six Sigma began to be widely used in the 1990s and has become a popular approach to business process improvement around the world.
What is Lean Six Sigma

Lean Six Sigma is a powerful, team-based approach for dramatically improving business processes through eliminating waste and increasing quality and efficiency, resulting in enhanced customer experience, lower costs and happier staff.

- Reduced cost, increased profit
- Improved customer satisfaction
- Shorter cycle times
- Improved employee morale

Lean Six Sigma works for any sized business in any industry sector.
Lean Six Sigma is a combination of two powerful process improvement methods: **Lean** and **Six Sigma**.

- **Lean**, originally developed by Toyota, is a set of principles, practices and tools aimed at maximising customer value.
- **Six Sigma** is a structured approach aimed at increasing product and service quality by focusing on processes.

Integrating these approaches provides a comprehensive and proven approach that can transform an organisation.
Lean Six Sigma: key principles

- Focus on the Customer
- Identify and understand how work gets done
- Manage, improve and smooth the process
- Remove non-value adding steps and waste
- Manage by fact and reduce variation
- Involve and equip the people in the process
- Undertake improvement activity in a systematic way
Lean Six Sigma is simply an effective methodology used to fix a problem. It is based on common sense practices and is completed in five phases:

**DMAIC (Define, Measure, Analyze, Improve and Control)**

Refers to a data-driven improvement cycle used for improving, optimizing and stabilizing business processes and designs. The DMAIC improvement cycle is the core tool used to drive Six Sigma projects.
The benefits of Lean Six Sigma

- Increased **productivity**
- Improved **quality**
- **Reduced** operation costs
- **Higher** customer satisfaction
- **Improved communication** among team members
- Analyse your organization's overall operation and find the bottlenecks
- Quickly **identify waste** within any business process
- **Added value** for customers, employees and shareholders through reduced process variation and waste
- **Learn** the right process improvement tools to apply to **boost performance**
- **Improved performance** and **reduced timescales** for Lean Six Sigma projects
- Develop the **soft skills** needed to successfully deliver change projects
Training and certification
<table>
<thead>
<tr>
<th>Belt Level</th>
<th>Education Level</th>
<th>Who is it for?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yellow Belt</strong></td>
<td>Awareness</td>
<td>Anyone who wants to learn basic Lean Six Sigma principles and the most important Lean Six Sigma instruments.</td>
</tr>
<tr>
<td><strong>Orange Belt</strong></td>
<td>Foundation</td>
<td>Anyone who is directly or indirectly involved in process improvement in his / her own work environment or as a team member of a larger project.</td>
</tr>
<tr>
<td><strong>Green Belt</strong></td>
<td>Practitioner</td>
<td>Department managers, engineers, process engineers and process managers working on process improvement as team members or project leaders.</td>
</tr>
<tr>
<td><strong>Black Belt</strong></td>
<td>Expert</td>
<td>Project managers, department managers, senior engineers, process engineers and consultants working on process improvement as project managers.</td>
</tr>
</tbody>
</table>
The purpose of the Yellow Belt qualification is to confirm that a candidate has sufficient knowledge and understanding of the Lean Six Sigma process improvement methodology and practice to be able to work effectively with, or as a member of, a process improvement team working within an environment supporting Lean Six Sigma.
The purpose of the Orange Belt qualification is to confirm that a candidate has sufficient knowledge, understanding and application of the Lean Six Sigma process improvement methodology and practice to be able to work effectively as the team leader of a Kaizen, Lean or less complicated Six Sigma process improvement projects in their immediate environment within an overall environment supporting Lean Six Sigma.
The purpose of the Green Belt qualification is to confirm that a candidate has sufficient knowledge, understanding and application of the Lean Six Sigma process improvement methodology, practice and analytical tools to be able to work effectively as the team leader of Lean Six Sigma process improvement projects or as a member of a Black Belt process improvement project, within an environment supporting Lean Six Sigma.
The purpose of the Black Belt qualification is to confirm that a candidate has sufficient knowledge, understanding and application of the Lean Six Sigma process improvement methodology, practice and analytical tools to be able to work effectively as the team leader of complex breakthrough Lean Six Sigma process improvement projects and to support improvement teams operating within an environment supporting Lean Six Sigma.
Syllabus

Eight key areas:

- World Class Performance
- Process Improvement Deployment
- Project Management
- Level I – Creating a Solid Foundation
- Level II – Creating a Continuous Improvement Culture
- Level III – Creating Stable and Efficient Processes
- Level IV – Creating Capable Processes
- Level V – Creating World Class Products and Service
Continuous Improvement Maturity Model

- The syllabus is based on the ‘Continuous Improvement Maturity Model’ (CIMM), a framework that guides an evolutionary staged approach for process improvement from a very early stage to delivering world class products.
- Incorporates best practice methods and techniques of process improvement, quality management and new product development.
- Includes best practices from Total Quality management (TQM), Kaizen, Total Productive Maintenance (TPM), Lean, Six Sigma and Design for Six Sigma.
- Model describes five maturity levels (see next slide).
- CIMM can support other maturity models, or act as a stand-alone framework.
Continuous Improvement Maturity Model

I. Creating a solid foundation
   - Organized work environment
   - Standardized work
   - Quality control & Quality assurance

II. Creating a Continuous Improvement culture
    - Kaizen events & 'Go to Gemba'
    - Short Interval Management
    - Work In Process (WIP) control

III. Creating stable & efficient processes
     - Lean Management (Flow & Pull)
     - Waste elimination
     - Risk Management & First Time Right

IV. Creating capable processes
    - Six Sigma
    - Reducing variation
    - Statistical analysis

V. Creating World Class products & services
   - Product Lifecycle Management
   - Design for Six Sigma
   - Enterprise Agility

- World Class
- Capable
- Predictable
- Managed
- Structured
Underpinning guidance

‘Climbing the Mountain’ series
(published by Lean Six Sigma Academy)

- Underpins APMG Yellow + Orange Belt Syllabi
- Underpins APMG Green Belt Syllabus
- Underpins APMG Black Belt Syllabus
Target audience: Yellow & Orange Belts

Job Roles – Yellow Belt: Team Members, Operators, Staff

Job Roles – Orange Belt: Team Members, Lean Facilitators, Supervisors
Target audience: Green Belt

Lean Six Sigma Green Belts are specialists in executing Lean Six Sigma projects. With the right combination of specialist expertise, statistical analysis and structured Lean Six Sigma methodology, the Green Belt is able to achieve significant improvements in performance and quality. A Green Belt **might work alone** or as a **junior project manager**, in a **team** or as a **team member** in larger Black Belt project.

*Job Roles*: Engineers, Process Owners, Project Leaders
Target audience: Black Belt

Lean Six Sigma Black Belts are experts in executing Lean Six Sigma projects. As a program manager they are responsible for managing complex breakthrough projects and supporting improvement teams with tools and techniques. They have both skills for applying analytical tools and skills for leading change.

**Job Roles:** Senior Engineers, Project Managers, Consultants
Approved training courses available via APMG ATOs (Accredited Training Organizations)

APMG accredited processes, courseware and trainers.
Benefits / Learning Outcomes

- The general philosophy of Process Improvement, the different process improvement methods, the history of the most important methods and why process improvement is needed to move an organization closer to World Class Performance (Y/O/G/B)

- The way improvement projects should be executed starting with the identification of customers and their requirements and including a number of project management roadmaps, team formation, the project charter and a number of Project Management tools (Y/O/G/B)

- The proper and organized work environment, reliable equipment and standardized work required to Create a Solid Foundation for further process improvement programs (Y/O/G/B)

- The tools and techniques to visualize, analyze and improve the logistical flow of processes making them more stable, predictable and efficient, effective, productive and agile by following the DMAIC structure to Create Stable and Efficient Processes (Y/O/G/B)
Benefits / Learning Outcomes

- The setup and facilitation of Kaizen teams, a number of problem solving and brainstorming techniques and basic quality tools that help to Create a Continuous Improvement Culture (Y/O/G/B)

- The application of Six Sigma and statistical tools to assure a valid and reliable performance measurement system, to collect data and to analyze the performance of and reducing the variation in stable processes by following the DMAIC structure in quality breakthrough improvement projects with the objective to Create Capable Processes that meet customer requirements (Y/O/G/B)

- The role and responsibilities of Leadership in its efforts to coach and inspire improvement teams, how teams develop and how change management is essential for Process Improvement Deployment across the organization (G/B)

- The application of Six Sigma tools in the product development process with the objective to design products and processes that will perform on a Six Sigma level from the earliest phase, Creating Reliable Products for the customer (G/B)
Exams & assessments
Testing methods

Single, multiple-choice exam

Theory exam + optional practical assessment

Theory exam + optional practical assessment
# Yellow & Orange Belt exams

<table>
<thead>
<tr>
<th>Yellow Belt</th>
<th>Orange Belt</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiple-choice format</strong></td>
<td><strong>Multiple-choice format</strong></td>
</tr>
<tr>
<td>50 questions</td>
<td>50 questions</td>
</tr>
<tr>
<td>63% pass mark (32/50)</td>
<td>63% pass mark (32/50)</td>
</tr>
<tr>
<td>60 minutes</td>
<td>90 minutes</td>
</tr>
<tr>
<td>Open-book</td>
<td>Open-book</td>
</tr>
</tbody>
</table>
# Green & Black Belt Theory exams

<table>
<thead>
<tr>
<th>Green Belt Theory</th>
<th>Black Belt Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiple-choice format</strong></td>
<td><strong>Multiple-choice format</strong></td>
</tr>
<tr>
<td>60 questions</td>
<td>60 questions</td>
</tr>
<tr>
<td>63% pass mark (38/60)</td>
<td>63% pass mark (38/60)</td>
</tr>
<tr>
<td>180 minutes</td>
<td>180 minutes</td>
</tr>
<tr>
<td>Open-book</td>
<td>Open-book</td>
</tr>
</tbody>
</table>
Green & Black Belt Practical Assessments (optional)

<table>
<thead>
<tr>
<th>Green Belt Practical Assessment</th>
<th>Black Belt Practical Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>This step towards achieving the complete Green Belt certificate involves the submission of two Lean Six Sigma projects to APMG for assessment.</td>
<td>This step towards achieving the complete Black Belt certificate involves the submission of two Lean Six Sigma projects to APMG for assessment.</td>
</tr>
<tr>
<td>Each project must demonstrate an achievement of saving / cost avoidance of at least € 20,000 per year.</td>
<td>Each project must demonstrate an achievement of saving / cost avoidance of at least € 50,000 per year.</td>
</tr>
<tr>
<td>Each project must be signed-off by the Champion and Financial Controller.</td>
<td>Each project must be signed-off by the Champion and Financial Controller.</td>
</tr>
<tr>
<td>The Practical Assessment must be taken within 3 years of successfully completing the theory exam.</td>
<td>The Practical Assessment must be taken within 3 years of successfully completing the theory exam.</td>
</tr>
</tbody>
</table>
SUCCESSFUL CANDIDATES

#ShareYourSuccess

WITH A DIGITAL BADGE

- Lean Six Sigma Yellow Belt Foundation
- Lean Six Sigma Green Belt Theory
- Lean Six Sigma Orange Belt Foundation
- Lean Six Sigma Black Belt Theory

apmg-international.com
Find out more…

apmg-international.com/leansixsigma
lssaeu