

SkillUp

Improvement Techniques and Control Tools

This course is part of [ASQ-Certified Six Sigma Yellow Belt Exam Prep Specialization](#)



Instructors: [F R Suresh Narain](#) +1 more

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5 modules

Gain insight into a topic and learn the fundamentals.

Beginner level

Recommended experience ⓘ

8 hours to complete

Flexible schedule

Learn at your own pace

What you'll learn

- ✓ Implement the identified solutions to bring improvement by making process amendments and introducing new tools or technologies.
- ✓ Define and implement control measures to monitor the process and ensure it stays on track.
- ✓ Optimize the process to maximize the impact of the improvement solutions.
- ✓ Implement mechanisms to sustain the improvements over the long term.

Skills you'll gain

[Waste Minimization](#) [Lean Methodologies](#) [Continuous Improvement Process](#) [Quality Control](#) [Employee Training](#) [Process Management](#) [Process Optimization](#)
[Lean Manufacturing](#) [Process Improvement](#) [Six Sigma Methodology](#) [Quality Improvement](#) [View less skills](#)

Details to know



Shareable certificate
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Assessments
11 assignments¹
AI Graded see disclaimer

-Taught in English

See how employees at top companies are mastering in-demand skills





Build your subject-matter expertise

This course is part of the [ASQ-Certified Six Sigma Yellow Belt Exam Prep Specialization](#)

When you enroll in this course, you'll also be enrolled in this Specialization.

- Learn new concepts from industry experts
- Gain a foundational understanding of a subject or tool
- Develop job-relevant skills with hands-on projects
- Earn a shareable career certificate

There are 5 modules in this course

This course introduces you to the processes and tools to implement the improvement strategies and then sustain them by controlling your process as per the implemented solutions. Based on the analysis from the previous phases of the define, measure, analyze, improve, and control (DMAIC) framework, you will learn to evaluate the potential solutions and select the most effective ones to bring improvement to your process. This may involve changing the process, introducing new tools or technologies, or implementing best practices. The course also delves into the importance of continuously refining and optimizing the process to maximize the impact of the improvement solutions.

Further, you will learn how to establish control measures to monitor the process and ensure it stays on track after the improvements are implemented. Finally, the course delves into the criticality of sustaining the implemented improvements for long-term benefit. You will learn how to implement mechanisms to sustain the improvements, such as conducting employee training, regular measurement practices, periodic reviews, and continuous improvement efforts.

[Read less](#)

Lean tools and techniques for process improvement

[Module details ^](#)

Module 1 • 1 hour to complete

In this module, you will be introduced to the core principles and methodologies of Lean thinking. You will gain insight into essential Lean tools and techniques such as the five Ss (5S), 5S plus safety, and 6S and single-minute exchange of die (SMED), enabling you to lead process improvement initiatives within your organizations successfully. You will learn to implement SMED, a Lean tool used in manufacturing, to decrease the equipment changeover time. Additionally, you will be introduced to 5S, another Lean tool that represents the steps needed to accomplish this objective, namely, sort, set, shine, standardize, and sustain. The key objective of 5S is to create an uncluttered environment that enables people to carry out their job responsibilities without wasting time and reducing the risk of injury.

What's included

7 videos 2 readings 3 assignments 1 discussion prompt

[Hide info about module content ^](#)

7 videos • Total 40 minutes

Specialization Overview • 5 minutes

Course Introduction • 3 minutes

5S overview • 6 minutes

6S Lean • 6 minutes

Single-minute exchange of die (SMED) • 7 minutes

SMED: Internal and external activities • 4 minutes

SMED: Converting internal activities to external activities • 5 minutes

2 readings • Total 10 minutes

Course Overview • 5 minutes

Reduce setup times with the SMED method • 5 minutes

3 assignments • Total 44 minutes

Graded Quiz: Lean tools and techniques for process improvement • 30 minutes

Practice Quiz: Essentials of 5S principles • 8 minutes

Practice Quiz: Overview of single-minute exchange of die (SMED) • 6 minutes

1 discussion prompt • Total 10 minutes

Two waste concepts: Waiting and motion • 10 minutes

Lean Tools: Essentials of poka-yoke

[Module details ^](#)

Module 2 • 1 hour to complete

This module introduces you to another powerful and effective Lean tool, poka-yoke, which was developed as a key component of the Toyota Production System (TPS). Poka-yoke is a process improvement technique, literally meaning “avoiding mistakes or errors.” It was developed in the 1960s by Shigeo Shingo. This technique significantly decreases the number of defects produced and is also known as error-proofing. In this module, you will learn about some real-life examples of poka-yoke and how to implement this technique by eliminating opportunities for defects or errors.

What's included

4 videos 1 reading 3 assignments 1 discussion prompt

[Hide info about module content ^](#)

4 videos • Total 18 minutes

Poka-yoke: An overview • 3 minutes

Poka-yoke: Types and how and where to implement • 6 minutes

Poka-yoke: Pros and cons • 3 minutes

Poka-yoke: Detection and prevention techniques • 5 minutes

1 reading • Total 3 minutes

Mistake proofing • 3 minutes

3 assignments • Total 38 minutes

Graded Quiz: Lean tools: Essentials of poka-yoke • 30 minutes

Practice Quiz: Poka-yoke techniques • 4 minutes

Practice Quiz: Poka-yoke and its benefits • 4 minutes

1 discussion prompt • Total 15 minutes

Implementation of poka-yoke • 15 minutes

Eight types of wastes

[Module details ^](#)

Module 3 • 1 hour to complete

In this module, you will learn about the concept of the eight wastes or 8 forms of waste, which is a fundamental Lean manufacturing and Six Sigma principle. The various non-value-added activities and inefficiencies within a process are known as the eight types of waste. Finding and reducing or eliminating these wastes can cut down your organization's costs, chances of accidents, and lead times and make both employees and end customers happier. Waste reduction is a fundamental concept in Lean Six Sigma, and this module will equip you with the knowledge and tools needed to improve efficiency, productivity, and quality within your process and organization.

What's included

9 videos 1 reading 3 assignments 1 discussion prompt

[Hide info about module content ^](#)

9 videos • Total 49 minutes

Types of waste and their identification • 5 minutes

Value-added and non-value-added activities • 10 minutes

Necessary non-value-added activities • 6 minutes

Transportation waste • 4 minutes

Motion waste • 3 minutes

Waiting waste • 3 minutes

Overprocessing waste • 5 minutes

Overproduction waste • 4 minutes

Defects and unutilized talent wastes • 7 minutes

1 reading • Total 2 minutes

Defect waste and its significance to the business • 2 minutes

3 assignments • Total 44 minutes

Graded Quiz: Eight types of wastes • 30 minutes

Practice Quiz: Identifying waste and its related activities • 6 minutes

Practice Quiz: Types of waste and how to eliminate them • 8 minutes

1 discussion prompt • Total 10 minutes

Eight types of waste in your organization • 10 minutes

Control Charts

[Module details ^](#)

Module 4 • 1 hour to complete

In this module, you will gain an overview of control charts and their application in process monitoring and quality control. Control charts determine if a process is in control or is stable or if it is out of control and requires some adjustment. Control charts are beneficial for your organization as you need to take some action to correct the variations that could have a negative impact on your business. You will learn about specific control charts for continuous data and how to create and interpret these charts, analyze patterns, and make data-driven decisions to improve process stability and performance. The module combines theoretical knowledge with practical exercises and case studies to equip you with the skills to implement control charts in various industries.

What's included

3 videos 1 reading 2 assignments 1 discussion prompt

[Hide info about module content ^](#)

3 videos • Total 25 minutes

Control chart and its types • 9 minutes

Variable control charts • 8 minutes

Discrete control charts • 7 minutes

1 reading • Total 3 minutes

Interpreting control charts • 3 minutes

2 assignments • Total 36 minutes

Graded Quiz: Control charts • 30 minutes

Practice Quiz: Introduction to control charts • 6 minutes

1 discussion prompt • Total 15 minutes

Justification to use X bar-R chart or X bar-S chart • 15 minutes

Peer-Reviewed Assignment

Module details ^

Module 5 • 2 hours to complete

In this module, you will work on a peer-review assignment, which is based on the concepts taught in the Improvement Techniques and Control Tools course. In this assignment, you will apply your knowledge about Poka-Yoke to identify how various Poka-Yoke techniques are used in real life. This will encourage you to look around and study from examples in everyday life.

What's included

1 video 2 readings 1 peer review

[Hide info about module content ^](#)

1 video • Total 2 minutes

Course wrap-up • 2 minutes

2 readings • Total 4 minutes

Congratulations and next steps • 2 minutes

Thanks from the course team • 2 minutes

1 peer review • Total 120 minutes

Applications of Poke-Yoke • 120 minutes



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Instructors



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DMAIC Framework: Analyze, Improve, and Control Phase

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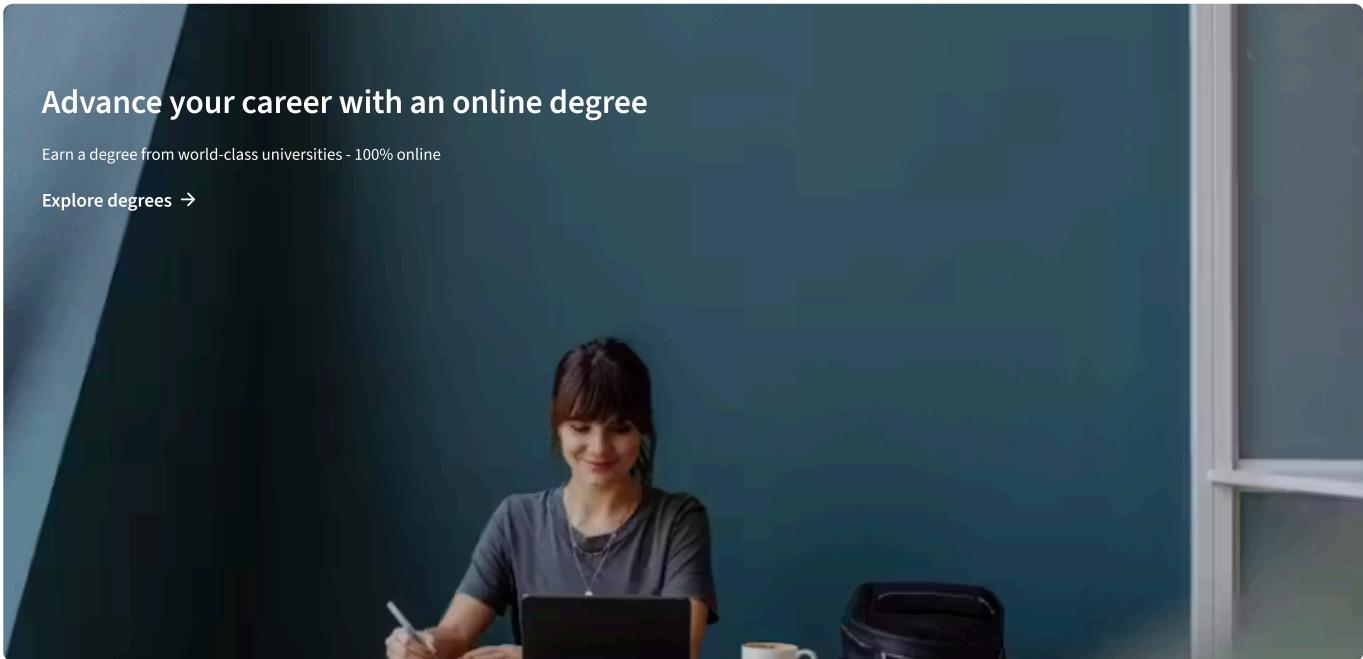
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Frequently asked questions

^ When will I have access to the lectures and assignments?

To access the course materials, assignments and to earn a Certificate, you will need to purchase the Certificate experience when you enroll in a course. You can try a Free Trial instead, or apply for Financial Aid. The course may offer 'Full Course, No Certificate' instead. This option lets you see all course materials, submit required assessments, and get a final grade. This also means that you will not be able to purchase a Certificate experience.

^ What will I get if I subscribe to this Specialization?

When you enroll in the course, you get access to all of the courses in the Specialization, and you earn a certificate when you complete the work. Your electronic Certificate will be added to your Accomplishments page - from there, you can print your Certificate or add it to your LinkedIn profile.

^ Is financial aid available?

Yes. In select learning programs, you can apply for financial aid or a scholarship if you can't afford the enrollment fee. If fin aid or scholarship is available for your learning program selection, you'll find a link to apply on the description page.

More questions



[Visit the learner help center](#)

Financial aid available, [learn more](#)

¹ Some assignments in this course are AI-graded. For these assignments, your data will be used in accordance with [Coursera's Privacy Notice](#).

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Artificial Intelligence (AI)	Google Cybersecurity Certificate	Business	Career Aptitude Test
Cybersecurity	Google Data Analytics Certificate	Computer Science	Examples of Strengths and Weaknesses for Job Interviews
Data Analytics	Google IT Support Certificate	Data Science	High-Income Skills to Learn
Digital Marketing	Google Project Management Certificate	Education & Teaching	How Does Cryptocurrency Work?
English Speaking	Google UX Design Certificate	Engineering	How to Highlight Duplicates in Google Sheets
Generative AI (GenAI)	IBM Data Analyst Certificate	Finance	How to Learn Artificial Intelligence
Microsoft Excel	IBM Data Science Certificate	Healthcare	Popular Cybersecurity Certifications
Microsoft Power BI	Machine Learning Certificate	Human Resources (HR)	Preparing for the PMP Certification
Project Management	Microsoft Power BI Data Analyst Certificate	Information Technology (IT)	Signs You Will Get the Job After an Interview
Python	UI / UX Design Certificate	Marketing	What Is Artificial Intelligence?

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MasterTrack® Certificates		Articles
Degrees		Directory
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