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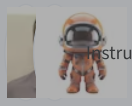
Lean Manufacturing & Robotics for Flexible Systems



Instructors: Mustafa Bayulgen +1 more

1,781 already enrolled

4 modules
Gain insight into a topic and learn the fundamentals.

4.4 ★
(22 reviews)

Beginner level
Recommended experience

6 hours to complete

Flexible schedule
Learn at your own pace

What you'll learn

- The fundamental principles of Flexibl… Manufacturing.
- The impact of robotics and automati… manufacturing.

…for enhancing efficiency and continuous
…rategies for optimizing manufacturing

Skills you'll gain

Change Management | Automation | Pr… | …cess Automation | Lean Manufacturing | Manufacturing Processes | Emerging Technologies | Continuous Improvement Process | View less skills

Details to know

Shareable certificate
Add to your LinkedIn profile

Assessments
4 assignments

Taught in English

Recommended experience

Beginner level

Prior knowledge of manufacturing principles and some familiarity with Lean concepts are beneficial for this course.

OK

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There are 4 modules in this course

This course explores the integration of Flexible Manufacturing Systems (FMS) with Lean Manufacturing principles, emphasizing how a lean transformation facilitates robotics and automation. Participants gain a solid understanding of FMS and Lean principles, delve into Lean tools integration within FMS, and explore robotics and automation integration for enhanced adaptability and precision in manufacturing.

Through interactive video lectures, case study analyses, and scenario-based learning activities, participants acquire hands-on skills in optimizing manufacturing processes. Real-world examples highlight successful implementations of FMS, Lean principles, robotics, and automation, fostering skill-building and empowering participants to drive continuous improvement in manufacturing environments.

solving experiences and critical analysis of manufacturing scenarios. Pre-requisites include a basic understanding of manufacturing principles and familiarity with Lean concepts, though not mandatory.

Read less

Introduction to Flexible Manufacturing Systems (FMS)

Module 1 • 1 hour to complete

Module details

Module 1 provides a comprehensive introduction to Flexible Manufacturing Systems (FMS), covering the core concepts, components, types, and applications of FMS in modern manufacturing. Through a series of video lectures and suggested readings, learners gain insights into the importance of flexibility in manufacturing, types of FMS, and real-world applications across various industries.

What's included

10 videos 4 readings 1 assignment 2 discussion prompts

Hide info about module content

10 videos • Total 45 minutes

Introduction and Welcome
•
2 minutes

An Overview of FMS
•
3 minutes

Core Components of FMS
•
3 minutes

Importance of Flexibility in Manufact
•
4 minutes

CNC Machines and Robotics
•
3 minutes

Automated Guided Vehicles (AGVs)
•
4 minutes

Computer Integrated Manufacturing (CIM)
•
6 minutes

FMS in Automotive Industry
•
6 minutes

FMS in Electronics Manufacturing
•
5 minutes

An FMS Implementation Example
•
5 minutes

4 readings • Total 20 minutes

Welcome to the Course: Course Overview
•
5 minutes

Flexible Manufacturing System
•
5 minutes

Recommended experience

Beginner level

Prior knowledge of manufacturing principles and some familiarity with Lean concepts are beneficial for this course.

What are Automated Guided Vehicle Systems?
•
5 minutes

3 Applications Of Automation In The Automotive Industry
•
5 minutes

1 assignment • Total 20 minutes

Introduction to Flexible Manufacturing Systems (FMS)
•
20 minutes

2 discussion prompts • Total 10 minutes

Harnessing Flexible Manufacturing and Emerging Technologies for Market Agility
•
5 minutes

FMS Alignment with Automotive Trends & Challenges
•
5 minutes

Introduction to Lean Manufacturing

Module 2 • 1 hour to complete

Module details

Module 2 introduces learners to the foundational concepts of Lean Manufacturing, focusing on its principles, tools, techniques, and implementation strategies.

What's included

9 videos 3 readings

Hide info about module content

9 videos • Total 48 minutes

Introduction to Module 2
•
2 minutes

Overview of Lean Principles
•
5 minutes

Types of Waste in Lean
•
3 minutes

Continuous Improvement in Lean
•
5 minutes

5S Methodology
•
6 minutes

Kanban System
•
6 minutes

Implementing Lean in Manufacturing – Part 1
•
6 minutes

Implementing Lean in Manufacturing - Part 2
•
6 minutes

Implementing Lean in Manufacturing – Part 3
•
6 minutes

3 readings • Total 15 minutes

Recommended experience

Beginner level

Prior knowledge of manufacturing principles and some familiarity with Lean concepts are beneficial for this course.

Where to Start Your Kaizen?
•
5 minutes

Value Stream Mapping
•
5 minutes

•
5 minutes

1 assignment • Total 20 minutes

Introduction to Lean Manufacturing
•
20 minutes

2 discussion prompts • Total 10 minutes

Kaizen Principles: Cultivating a Culture of Continuous Improvement
•
5 minutes

Challenges and Strategies for Lean Implementation
•
5 minutes

Bridging the Gap: Integrating FMS with Lean

Module details

Module 3 • 1 hour to complete

Module 3 delves into the process of i l explore the significance, challenges, and benefits of combining these met

What's included

10 videos 3 readings

Hide info about module content

10 videos • Total 55 minutes

Introduction to Module 3
•
2 minutes

Importance of Integration
•
4 minutes

Common Challenges
•
5 minutes

Benefits of Combining FMS and Lean
•
6 minutes

Aligning FMS with Lean Goals
•
5 minutes

Enhancing Efficiency through Integration – Part 1
•
6 minutes

Enhancing Efficiency Through Integration – Part 2
•
6 minutes

Leadership Commitment and Vision Setting
•
5 minutes

Employee Training and Engagement
•

Recommended experience

Beginner level

Prior knowledge of manufacturing principles and some familiarity with Lean concepts are beneficial for this course.

6 minutes

Monitoring and Continuous Improvement

•

6 minutes

3 readings • Total 15 minutes

•

5 minutes

What Is Lean Manufacturing?

•

5 minutes

The Leadership Behaviors Supporting a Lean Transformation

•

5 minutes

1 assignment • Total 20 minutes

Bridging the Gap: Integrating FMS with Lean

•

20 minutes

2 discussion prompts • Total 10 minutes

Strategies for Overcoming Cultural Resistance and Promoting Integration

•

5 minutes

Challenges in Integrating FMS with Le

•

5 minutes

Recommended experience

Beginner level

Prior knowledge of manufacturing principles and some familiarity with Lean concepts are beneficial for this course.

Real-world Applications and

Module 4 • 1 hour to complete

Module details

Real-world Applications and Future T ufacturing Systems (FMS) and delves into emerging technologies sh

What's included

11 videos 3 readings 1 assignment 2 discussion prompts

Hide info about module content

11 videos • Total 54 minutes

Introduction to Module 4

•

2 minutes

A Real-world Example of FMS-lean Integration

•

5 minutes

Challenges to Overcome in Implementation

•

5 minutes

Lessons Learned from the Real-world Case

•

5 minutes

Industry 4.0 and its Impact

•

6 minutes

AI and Machine Learning in Manufacturing

•

4 minutes

Future Trends and Innovations

•

3 minutes

Recap of Key Concepts
•
5 minutes

Addressing Common Questions
•

Looking Ahead: Future of Flexible and Lean Manufacturing
•
6 minutes

Wrap Up and Key Takeaways
•
1 minute

3 readings • Total 25 minutes

Luxury Car Assembly at Audi and Daimler
•
5 minutes

Interview on the David Pakman Show on the Future of Manufacturing
•
10 minutes

Why Lean Manufacturing is the Future in 2030 ?
•
10 minutes

1 assignment • Total 20 minute

Real-world Applications and Future T
•
20 minutes

2 discussion prompts • Total 1

Overcoming Cultural Resistance and
•
5 minutes

Implementing Autonomous Manufac
•
5 minutes

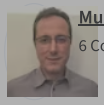
Recommended experience

Beginner level

Prior knowledge of manufacturing principles and some familiarity with Lean concepts are beneficial for this course.

Instructors

Instructor ratings 4.5 ★ (11 ratings)



Mustafa Bayulgen
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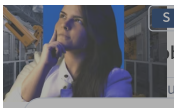

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★ 4.4 22 reviews

5 stars	68.18%
4 stars	9.09%
3 stars	18.18%
2 stars	4.54%
1 star	0%

Recommended experience

Beginner level

Prior knowledge of manufacturing principles and some familiarity with Lean concepts are beneficial for this course.

CO

★ 5 · Reviewed on Dec 6, 2024

The course was very detailed and stra bilities and challenges.

Chigozie James Okereke

NB

★ 5 · Reviewed on Aug 5, 2024

Excellent narrative and easy to grasp the tough subject made easy for even newcomers.

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Recommended experience

Beginner level

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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 purchase the Certificate?

When you purchase a Certificate you get access to all course materials, including graded assignments. Upon completing the course, 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

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Artificial Intelligence (AI)

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Digital Marketing

English Speaking

Generative AI (GenAI)

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Microsoft Power BI

Project Management

Python

Certificates & Programs

Google Cybersecurity Certificate

Google Data Analytics Certificate

Google IT Support Certificate

Google Project Management Certificate

Google UX Design Certificate

IBM Data Analyst Certificate

IBM Data Science Certificate

Machine Learning Certificate

Microsoft Power BI Data Analyst Certificate

UI / UX Design Certificate

Recommended experience

Beginner level

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Data Science

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Examples of Strengths and Weaknesses for Job Interviews

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