

# SIX-SIGMA MANUFACTURING PROCESSES IMPROVEMENT

**27.MAR-6.APR.2023**

**+INFO:** [www.run-eu.eu](http://www.run-eu.eu)

Organised by: IPCA and TUS

## SAP OVERVIEW

Six-sigma is a method to improve the performance and capability of business processes to consistently provide compliant product parts.

### Objectives

- Learn the fundamentals of Lean and six sigma to define and lead a process improvement project.
- Acquire statistical skills to measure, analyse, improve and control Six Sigma projects.
- Gain knowledge of methods to implement changes in production processes ensuring that those changes have had the desired effect and are sustainable.

### Structure

The SAP is structured in two section:

- In the first section the fundamentals of six sigma and DMAIC methodology are presented.
- In the second section the learner will be introduced to statistical concepts within the Analyse, Improve and Control sections of the Six Sigma DMAIC problem solving methodology

## LEARNING OUTCOMES

After completing the SAP, the participants will have the fundamental knowledge and statistical techniques to be part of a Lean and Six Sigma project.

**DATE** From **27 March to 6 April 2023**  
Face-to-Face Weeks: IPCA, Campus, Portugal 3-6 April

**MODE OF DELIVERY** Blended

**LANGUAGE OF INSTRUCTION** English

**ECTS CREDITS** 2

### ACADEMIC RECOGNITION

To be defined by each Home Institution.  
In general terms, most students will have this RUN-EU SAP certified in the Diploma Supplement, as a minimal condition.

### ELIGIBLE PARTICIPANTS

Students from the areas relevant for manufacturing industry:

- Industrial Engineering and Management;
- Mechanical Engineering;
- Technical Drawing and Machining;
- Metrology, Instrumentation, and Industrial Quality;
- Industrial production management.

### HOW TO APPLY

Fill in the application form (**QR or website**)



### DEADLINE FOR APPLICATIONS

**28 February 2023**

### CONTACT DETAILS

sapsix-sigma@ipca.pt



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## SELECTION CRITERIA

### Joint Selection Procedure and Criteria

Motivation letter  
CV appraisal  
Manufacturing related studies

**Maximum Number of Students to be selected**  
25 students

## LEARNING AND TEACHING STRATEGY

Active Learning  
Resolution of exercises

## PREREQUISITES

Basic concepts of statistics.  
English (B2).

## COURSES LEADERS | LECTURERS

### Courses leaders

António Rocha (IPCA)  
Jennifer Hennessy (TUS)

### Coaches

Gabriela Viana (IPCA)  
Daniel Miranda (IPCA)  
Manuela Cunha (IPCA)

## PHYSICAL MOBILITY | SCHOLARSHIPS AVAILABLE

### For students

#### Travel cost per destination

Austria - Portugal 330 euros  
Finland - Portugal 470 euros  
Hungary - Portugal 380 euros  
Ireland - Portugal 270 euros  
The Netherlands - Portugal 330 euros  
Portugal - Portugal - 40 euros

#### Total subsistence cost per destination

The subsistence amount for Portugal is 460 euros.

## MEANS AND CRITERIA FOR ASSESSMENT

Individual participation (attendance): 20%  
Project work: 20%

Assignment 1: Exercise on parametric and non-parametric hypothesis testing and ANOVA: 20%

Assignment 2: Analysis of production data using descriptive and inferential statistics (to be completed as a management style written report): 40%

## CERTIFICATION

The participants who successfully complete this RUN-EU SAP will receive a Certificate of Participation and a Transcript of Records jointly issued by the organising institutions.



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## PROGRAMME AT A GLANCE

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GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
<b>MONDAY 27/03</b>											
<b>TUESDAY 28/03</b>											
<b>WEDNESDAY 29/03</b>											
<b>THURSDAY 30/03</b>											
<b>FRIDAY 31/03</b>											
<b>MONDAY 3/04</b>											
<b>TUESDAY 4/04</b>											
<b>WEDNESDAY 5/04</b>											
<b>THURSDAY 6/04</b>											



# SIX-SIGMA MANUFACTURING PROCESSES IMPROVEMENT

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27 MARCH				MONDAY 14H00-18H00 GMT - ONLINE							
GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
MONDAY 27/03											
							LUNCH BREAK	WELCOME & PRESENTATION	FOUNDATIONS OF SIX-SIGMA		

# Welcome & Presentation

🕒 14h00-15h00

# Foundations of Six-sigma

🕒 15h00-18h00

 This section will focus on the fundamentals of Six-sigma, introducing the DMAIC improvement approach and basic quality tools.

29 MARCH

THURSDAY 14H00-18H00 GMT · ONLINE

GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00


THURSDAY  
29/03

LUNCH  
BREAK

FOUNDATIONS OF PROJECT  
MANAGEMENT

# Foundations of Project Management

🕒 10h00-13h00

 This section will focus project management concepts and techniques to achieve goals and make projects more successful. It will introduce the learner to fundamentals of project management, to build a project plan and to manage resources and work, keeping a project on track.



# SHORT ADVANCED PROGRAMME



**RUN** REGIONAL  
UNIVERSITY  
NETWORK

EUROPEAN UNIVERSITY

# SIX-SIGMA MANUFACTURING PROCESSES IMPROVEMENT

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# 31 MARCH

**FRIDAY 17H00-18H00 GMT · ONLINE**

	GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
	GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
	GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
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FRIDAY 31/03												
							LUNCH BREAK					PROJECT WORK DELIVERY

## Project Work Delivery

🕒 17h00-18h00

# 3 APRIL

**MONDAY 11H00-18H00 - IPCA**

GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
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MONDAY 3/04							WELCOME & OPENING SESSION	VISIT TO THE M-FACTORY LAB & 2AI	LUNCH BREAK	MINITAB STATISTICS FOR MANUFACTURING PROCESSES IMPROVEMENT	


# Welcome & Opening Session

🕒 11h00-12h00

## Visit to M-Factory Lab & 2Ai

🕒 12h00-13h00

# Minitab Statistics for Manufacturing Processes Improvement

 14h00-18h00



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MANUFACTURING  
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4 APRIL				TUESDAY 9H00-18H00 · IPCA							
GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
TUESDAY 4/04			MINITAB STATISTICS FOR MANUFACTURING PROCESSES IMPROVEMENT			LUNCH BREAK	MINITAB STATISTICS FOR MANUFACTURING PROCESSES IMPROVEMENT				

Minitab Statistics for  
Manufacturing Processes  
Improvement

🕒 9h00-18h00

5 APRIL				WEDNESDAY 9H00-18H00 · IPCA							
GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
WEDNESDAY 5/04			MINITAB STATISTICS FOR MANUFACTURING PROCESSES IMPROVEMENT			LUNCH BREAK	CULTURAL SESSION				

Minitab Statistics for  
Manufacturing Processes  
Improvement

🕒 9h00-18h00

Cultural  
Session

🕒 14h00-18h00



SHORT  
ADVANCED  
PROGRAMME

# SIX-SIGMA MANUFACTURING PROCESSES IMPROVEMENT

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6 APRIL

THURSDAY 9H00-17H00 - IPCA

GMT+2	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00	20h00
GMT+1	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00	19h00
GMT	8h00	9h00	10h00	11h00	12h00	13h00	14h00	15h00	16h00	17h00	18h00
THURSDAY 6/04			MINITAB STATISTICS FOR MANUFACTURING PROCESSES IMPROVEMENT			LUNCH BREAK	MINITAB STATISTICS FOR MANUFACTURING PROCESSES IMPROVEMENT		COURSE APPRAISAL		

**Minitab Statistics for  
Manufacturing Processes  
Improvement**

🕒 9h00-16h00

**Course  
Appraisal**

🕒 16h00-17h00