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FORMAÇÃO AVANÇADA



Specialisation Course

Lean Six Sigma Green Belt (e-learning)

Lean and 6 Sigma are used to improve the quality and performance of companies, however, **the challenges associated with its implementation are often due to the lack of knowledge of its scientific basis and fundamentals.** The Lean Six Sigma Green Belt certification represents a **competitive advantage for all professionals who wish to improve their professional performance, standing out and becoming essential** in supporting the company's continuous improvement processes.

This course and certification in Lean Six Sigma Green Belt combines a quick, but intense and consistent review of the **fundamentals of Continuous Improvement, Lean and 6 Sigma methodologies.** This training is coordinated by **Paulo Peças, Associated Professor at Instituto Superior Técnico.** Besides his involvement, it also includes **Erising, a company specialising in Lean Manufacturing, Six Sigma and Continuous Improvement** in Portugal, and **GameChange, a leader in training and application of these methodologies,** with more than 7000 belts certified worldwide. This Green Belt training brings you closer to becoming an expert in continuous improvement processes, as you can further expand your acquired knowledge and proceed towards a Lean Six Sigma Black Belt certification. The e-learning edition of the course allows you to acquire knowledge at your own pace and anywhere in the world.

GOALS

- Understanding the fundamental principles of Lean and Six Sigma tools, from collecting data to stakeholder and process analysis;
- Grasping the continuous improvement, problem-solving approach DMAIC (Define, Measure, Analyse, Improve, Control);
- Developing analytical and problem-solving skills;
- Developing and supporting a culture of continuous improvement within the organisation.

TARGET STUDENTS

Course aimed at team members, supervisors, project managers, or other professionals in services, engineering and production companies, with an interest in deepening their knowledge in the area of continuous improvement, and with motivation to apply Lean and Six Sigma and even willing to proceed towards a Lean Six Sigma Black Belt certification.



Workload of 52h



1 100€



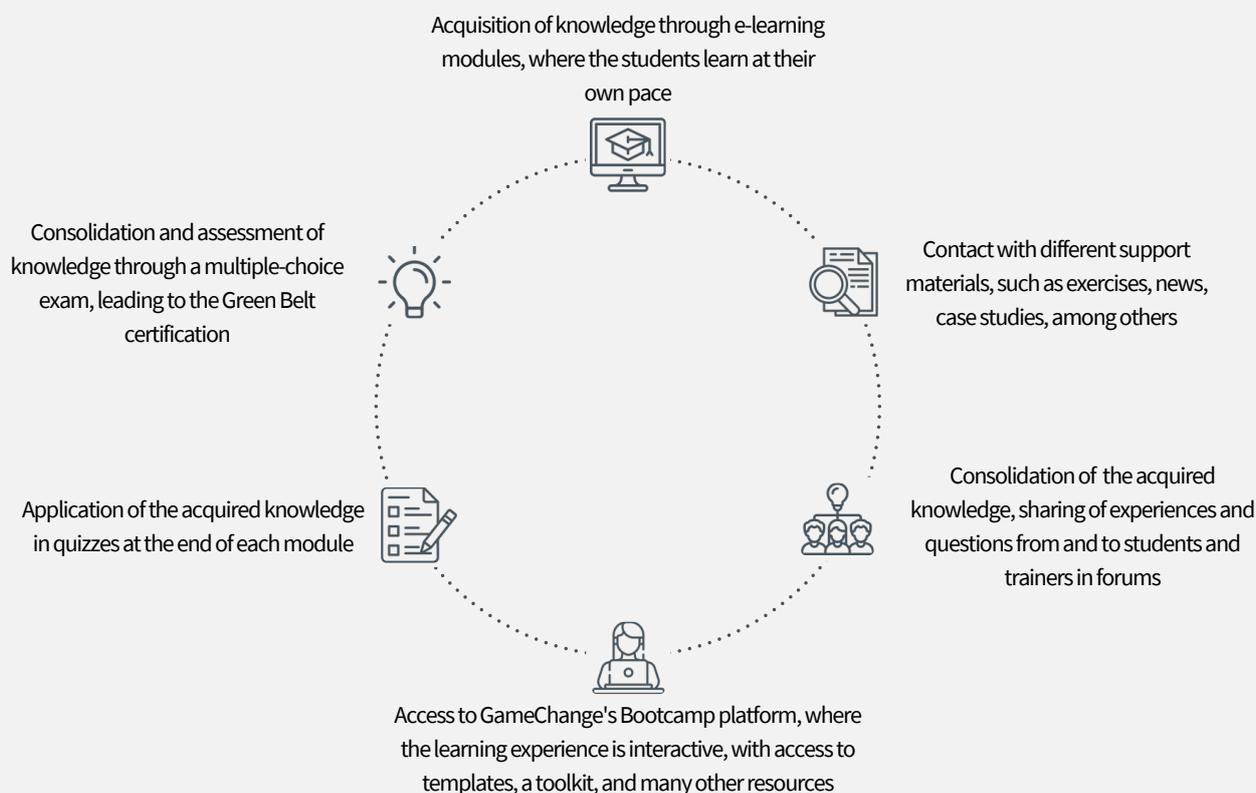
Online, e-learning



3 ECTS

METHODOLOGY AND EVALUATION

This course consists of 6 e-learning modules, where you acquire knowledge quickly and efficiently, through different materials.



Throughout the course, you will acquire knowledge in the different modules and the assessment consists of taking a Green Belt certification exam, at the end of the course, based on multiple choice questions. This exam follows the standards of the main references in the Lean Six Sigma philosophy, General Electric and Honeywell.

The approval condition for the Green Belt Certification and Specialisation Course Diploma is to obtain more than 70% in the classification of the exam to be carried out at the end of the modules.

This course is available as a **Specialisation Course**, with assessment and attribution of 3 ECTS credits. At the end, the student will receive a *Specialisation Course Diploma*.

PROGRAMME

1. Introduction to Lean Six Sigma

- General approach and fundamentals;
- Impact on organisations that use it.

2. Define

- Problem definition, customer needs and process:
 - Project Charter;
 - SIPOC;
 - Voice of the Customer;
 - Stakeholder Analysis.

3. Measure

- Diagnosis and analysis of the current situation:
 - Process analysis;
 - Data acquisition and processing;
 - Measurement systems;
 - Process capability.

4. Analyse

- Identify and verify root causes:
 - Sources of process variation;
 - Cause-effect analysis;
 - Process waste analysis;
 - Bottleneck analysis and takt time calculation;
 - Failure modal analysis;
 - Relationships between variables and modelling.

5. Improve

- Develop future state and implement:
 - Generation and selection of potential solutions;
 - Elimination of process waste;
 - Reduction of cycle time and/or lead time;
 - Implementation plan;
 - Resistance to change.

6. Control

- Maintain and control improvements:
 - Statistical process control (SPC);
 - Visual management;
 - Sustaining improvements;
 - How to close a project.

STATISTICS



With the same resources it is possible to increase productivity to +75%. Working longer hours or having more employees is not the answer. You must work smart!

Paulo Peças, Professor at IST



Ineffective communication is the source of all problems and persistent wastes.

Erising



Companies such as GE, Motorola and Honeywell have a lean and six sigma training approach focused on building technical skills and demonstrating the practical application of the DMAIC model to design scenarios and develop capabilities to select the right tools and techniques. This is the same approach that our course follows.

GameChange

SHOULD WE START A PROJECT TOGETHER?

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Specialisation Course

Lean Six Sigma Green Belt (Virtual Classroom)

Lean and 6 Sigma are used to improve the quality and performance of companies, however, **the challenges associated with its implementation are often due to the lack of knowledge of its scientific basis and fundamentals.** The Lean Six Sigma Green Belt certification represents a **competitive advantage for all professionals who wish to improve their professional performance, standing out and becoming essential** in supporting the company's continuous improvement processes.

This course and certification in Lean Six Sigma Green Belt combines a quick, but intense and consistent review of the **fundamentals of Continuous Improvement, Lean and 6 Sigma methodologies.** This training is coordinated by Paulo Peças, Associated Professor at Instituto Superior Técnico. Besides his involvement, it also includes **Erising, a company specialising in Lean Manufacturing, Six Sigma and Continuous Improvement** in Portugal, and **GameChange, a leader in training and application of these methodologies,** with more than 7000 belts certified worldwide. This Green Belt training brings you closer to becoming an expert in continuous improvement processes, as you can further expand your acquired knowledge and proceed towards a Lean Six Sigma Black Belt certification. This edition of the course will be taught remotely, combining e-learning modules with live sessions, allowing the acquisition of knowledge anywhere in the world.

GOALS

- Understanding the fundamental principles of Lean and Six Sigma tools, from collecting data to stakeholder and process analysis;
- Grasping the continuous improvement, problem-solving approach DMAIC (Define, Measure, Analyse, Improve, Control);
- Developing analytical and problem-solving skills;
- Developing and supporting a culture of continuous improvement within the organisation.

TARGET STUDENTS

Course aimed at team members, supervisors, project managers, or other professionals in services, engineering and production companies, with an interest in deepening their knowledge in the area of continuous improvement, and with motivation to apply Lean and Six Sigma and even willing to proceed towards a Lean Six Sigma Black Belt certification.



Total Workload: 52h*



Live Sessions:
2 May to 7 July 2022



Live Sessions:
Monday and Thursday,
18h30/21h30



e-learning modules and Live
Sessions through Zoom



2 200€



3 ECTS

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*34h of e-learning modules and 18h of live sessions

COORDINATION



Paulo Peças | IST

Professor at IST since 1991, in the Industrial Management group of the Department of Mechanical Engineering. Chair in Industry 4.0, The Navigator Company, with special emphasis on Digital Lean. Responsible for the discipline of Production Management of the Master in Mechanical Engineering. Researcher at IDMEC and responsible for several research projects in the area of operational efficiency and sustainability, with national and European companies. Supervision of more than 100 master's and doctoral theses in the area of Lean and Continuous Improvement. More than 20 years of experience in applying Lean and developing new tools. More than 100 international scientific publications.

TRAINERS



Helena Cecílio | ERISING

Master in Mechanical Engineering (IST), with involvement in an international project for the application of Material Flow Cost Accounting in an industrial context. Green-Belt and Lean Consultant at Erising, with responsibility for coordinating several Lean and Continuous Improvement projects in companies in the pharmaceutical, services, logistics, metal-mechanics and plastics sectors. Specialisation in Lean in a one-of-a-kind context, with emphasis on A3 Problem-Solving Techniques, SIPOC, Autonomous Maintenance, Kanban, on-line and supermarkets.



Diogo Jorge | ERISING

Master in Mechanical Engineering from Instituto Superior Técnico and Lean Six Sigma Master Black Belt (Bradford, UK). He is co-founder and manager at Erising, developing Lean Six Sigma projects in various organisations and in different sectors, and coordinates various activities in European and national R&D projects, focused on the area of process optimisation. At Instituto Superior Técnico, he is a guest lecturer in the Production Management course and has several publications in international conferences and book chapters, in the field of production systems' efficiency and effectiveness improvement.

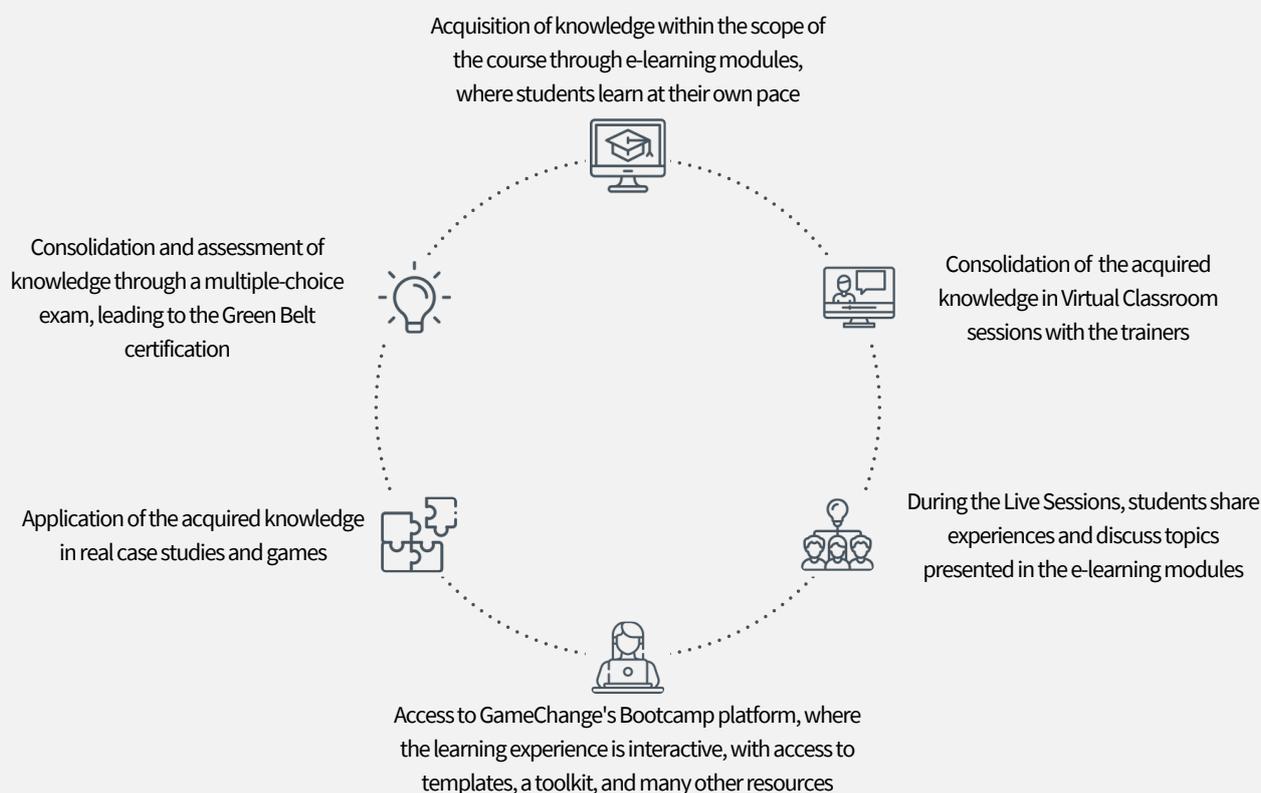


Kamran Zamir | Game-Change

Experience in managing the entire project lifecycle, from planning and scoping through delivery. GE and Honeywell Certified Master Black Belt in Process Variability Reduction (DMAIC), Process Waste Reduction (LEAN) and Growth Through Innovation Principles (DFSS). He is a Lean Six Sigma Expert and Trainer with a strong track record in delivering market penetration, business growth and turn-round strategies, having over 20 years of experience across a broad range of industries and business dynamics in the UK, Jersey (Channel Islands), Europe and Middle East.

METHODOLOGY AND EVALUATION

This course consists of 6 e-learning modules, which support several Virtual Classroom sessions, where there is interaction with experienced and qualified trainers, and topics presented throughout the course are discussed.



Throughout the course, you will acquire knowledge in the different modules and the assessment consists of taking a Green Belt certification exam, at the end of the course, based on multiple choice questions. This exam follows the standards of the main references in the Lean Six Sigma philosophy, General Electric and Honeywell.

The approval condition for the Green Belt Certification and Specialisation Course Diploma is to obtain more than 70% in the classification of the exam to be carried out at the end of the modules.

The student can choose to take this course in the following formats (the value is the same for any of the formats):

- **Specialisation Course:** with assessment and award of 3 ECTS credits. At the end, the trainee will receive a Specialisation Course Diploma.
- **Training Course:** without assessment and without attribution of ECTS credits, requiring 85% attendance. At the end, the trainee will receive a Training Course Certificate.

PROGRAMME

1. Introduction to Lean Six Sigma

e-learning

- General approach and fundamentals;
- Impact on organisations that use it.

Live Sessions 1 and 2

Prof. Paulo Peças and Eng^a. Helena Cecílio

2 and 5 May - Monday and Thursday, 18h30/21h30

- Discussion of topics presented throughout the online preparation modules.

2. Define

e-learning

- Problem definition, customer needs and process:
 - Project Charter;
 - SIPOC;
 - Voice of the Customer;
 - Stakeholder Analysis.

3. Measure

e-learning

- Diagnosis and analysis of the current situation:
 - Process analysis;
 - Data acquisition and processing;
 - Measurement systems;
 - Process capability.

Live Sessions 3 and 4

Kamran Zamir*

30 May and 2 June - Monday and Thursday, 18h30/21h30

- Discussion of topics presented throughout the online preparation modules.

4. Analyse

e-learning

- Identify and verify root causes:
 - Sources of process variation;
 - Cause-effect analysis;
 - Process waste analysis;
 - Bottleneck analysis and takt time calculation;
 - Failure modal analysis;
 - Relationships between variables and modelling.

5. Improve

e-learning

- Develop future state and implement:
 - Generation and selection of potential solutions;
 - Elimination of process waste;
 - Reduction of cycle time and/or lead time;
 - Implementation plan;
 - Resistance to change.

Live Sessions 5 and 6

Eng. Diogo Jorge and Prof. Paulo Peças

4 and 7 July - Monday and Thursday, 18h30/21h30

- Discussion of topics presented throughout the online preparation modules.

6. Control

e-learning

- Maintain and control improvements:
 - Statistical process control (SPC);
 - Visual management;
 - Sustaining improvements;
 - How to close a project.

*The sessions conducted by Kamran Zamir will be in English.

STATISTICS



With the implementation of Lean it is possible to achieve **+25% inventory reduction**. Raw material in stock, work-in-process along the line and finished product in stock consist not only of idle material, but also of unusable capital.

Paulo Peças, Professor at IST



Ineffective communication is the source of all problems and persistent wastes.

Erising



Companies such as GE, Motorola and Honeywell have a lean and six sigma training approach focused on building technical skills and demonstrating the practical application of the DMAIC model to design scenarios and develop capabilities to select the right tools and techniques. This is the same approach that our course follows.

GameChange



Microsoft was able to **improve defect correction by 40%** in the first year of applying Six Sigma methodologies. **Mean time between server failures has improved from 18 days to 125 days**. As a result of Six Sigma, Microsoft **has improved server availability, increased customer productivity, and increased customer satisfaction**.

Investopedia



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Paulo Peças, Professor at IST

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Specialisation Course

Lean Six Sigma Green Belt (Face-to-face)

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This course and certification in Lean Six Sigma Green Belt combines a quick, but intense and consistent review of the **fundamentals of Continuous Improvement, Lean and 6 Sigma methodologies.** This training is coordinated by Paulo Peças, Associated Professor at Instituto Superior Técnico. Besides his involvement, it also includes **Erising, a company specialising in Lean Manufacturing, Six Sigma and Continuous Improvement** in Portugal, and **GameChange, a leader in training and application of these methodologies,** with more than 7000 belts certified worldwide. This Green Belt training brings you closer to becoming an expert in continuous improvement processes, as you can further expand your acquired knowledge and proceed towards a Lean Six Sigma Black Belt certification. The face-to-face edition of the course allows you to acquire knowledge in an intensive and interactive way.

GOALS

- Understanding the fundamental principles of Lean and Six Sigma tools, from collecting data to stakeholder and process analysis;
- Grasping the continuous improvement, problem-solving approach DMAIC (Define, Measure, Analyse, Improve, Control);
- Developing analytical and problem-solving skills;
- Developing and supporting a culture of continuous improvement within the organisation.

TARGET STUDENTS

Course aimed at team members, supervisors, project managers, or other professionals in services, engineering and production companies, with an interest in deepening their knowledge in the area of continuous improvement, and with motivation to apply Lean and Six Sigma and even willing to proceed towards a Lean Six Sigma Black Belt certification.



Total Workload: 46h



20 May to
15 July 2022



Alameda Campus**



Fridays, 18h30/21h30 and
Saturdays, 09h00/13h00*



2 800€



3 ECTS

tecnicomais.pt

*This schedule is subject to variations. Please see the [programme](#) for a detailed timetable.

** One of the sessions will have two trainers in person and one trainer in online broadcast.

COORDINATION



Paulo Peças | IST

Professor at IST since 1991, in the Industrial Management group of the Department of Mechanical Engineering. Chair in Industry 4.0, The Navigator Company, with special emphasis on Digital Lean. Responsible for the discipline of Production Management of the Master in Mechanical Engineering. Researcher at IDMEC and responsible for several research projects in the area of operational efficiency and sustainability, with national and European companies. Supervision of more than 100 master's and doctoral theses in the area of Lean and Continuous Improvement. More than 20 years of experience in applying Lean and developing new tools. More than 100 international scientific publications.

TRAINERS



Helena Cecílio | ERISING

Master in Mechanical Engineering (IST), with involvement in an international project for the application of Material Flow Cost Accounting in an industrial context. Green-Belt and Lean Consultant at Erising, with responsibility for coordinating several Lean and Continuous Improvement projects in companies in the pharmaceutical, services, logistics, metal-mechanics and plastics sectors. Specialisation in Lean in a one-of-a-kind context, with emphasis on A3 Problem-Solving Techniques, SIPOC, Autonomous Maintenance, Kanban, on-line and supermarkets.



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Master in Mechanical Engineering from Instituto Superior Técnico and Lean Six Sigma Master Black Belt (Bradford, UK). He is co-founder and manager at Erising, developing Lean Six Sigma projects in various organisations and in different sectors, and coordinates various activities in European and national R&D projects, focused on the area of process optimisation. At Instituto Superior Técnico, he is a guest lecturer in the Production Management course and has several publications in international conferences and book chapters, in the field of production systems' efficiency and effectiveness improvement.

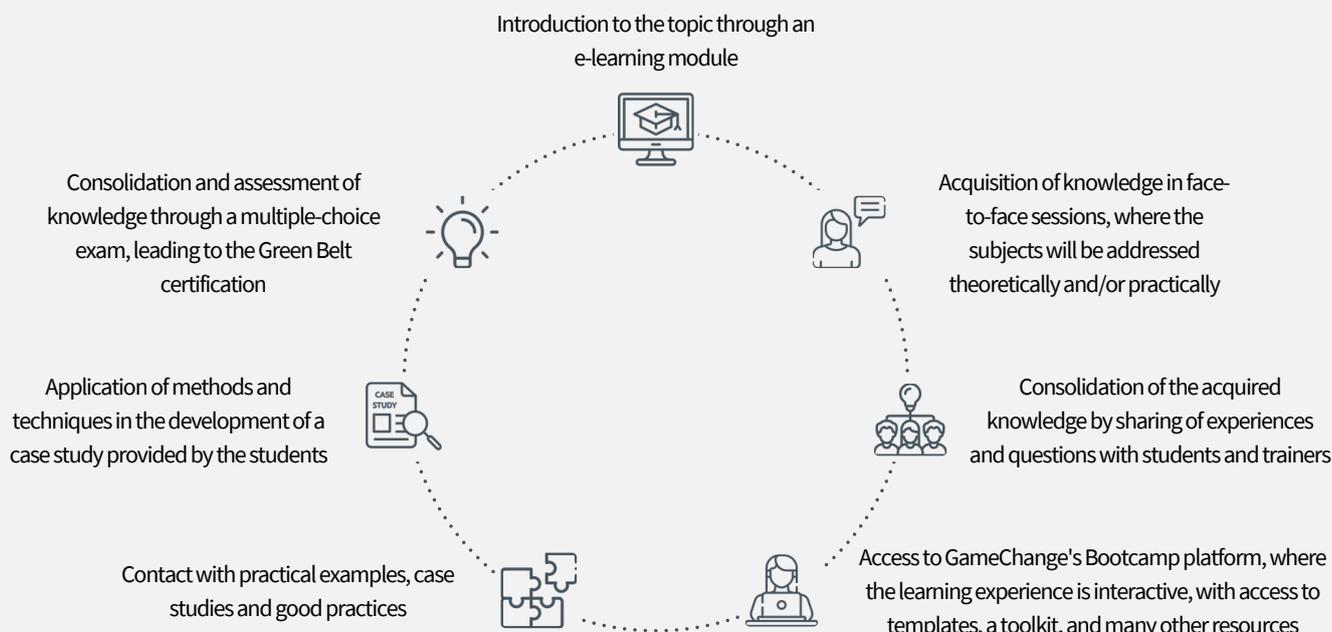


Kamran Zamir | Game-Change

Experience in managing the entire project lifecycle, from planning and scoping through delivery. GE and Honeywell Certified Master Black Belt in Process Variability Reduction (DMAIC), Process Waste Reduction (LEAN) and Growth Through Innovation Principles (DFSS). He is a Lean Six Sigma Expert and Trainer with a strong track record in delivering market penetration, business growth and turn-round strategies, having over 20 years of experience across a broad range of industries and business dynamics in the UK, Jersey (Channel Islands), Europe and Middle East.

METHODOLOGY AND EVALUATION

This course consists of 1 e-learning module, followed by several weeks of face-to-face sessions where the teaching is practical and interactive.



Throughout the course, you will acquire knowledge in the different modules and the assessment consists of taking a Green Belt certification exam, at the end of the course, based on multiple choice questions. This exam follows the standards of the main references in the Lean Six Sigma philosophy, General Electric and Honeywell.

The approval condition for the Green Belt Certification and Specialisation Course Diploma is to obtain more than 70% in the classification of the exam to be carried out at the end of the modules.

The student can choose to take this course in the following formats (the value is the same for any of the formats):

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PROGRAMME

1. Introduction to Lean Six Sigma

e-learning

- General approach and fundamentals;
- Impact on organisations that use it.

2. Define

Eng. Helena Cecílio

20 May - Friday, 18h30/21h30, 21 May - Saturday, 09h00/12h00 and 27 May - Friday, 18h30/20h30

- Problem definition, customer needs and process:
 - Project Charter;
 - SIPOC;
 - Voice of the Customer;
 - Stakeholder Analysis.

3. Measure

Eng. Diogo Jorge

28 May - Saturday, 09h00/12h00, 3 June - Friday, 18h30/20h30 and 4 June - Saturday, 09h00/12h00

- Diagnosis and analysis of the current situation:
 - Process analysis;
 - Data acquisition and processing;
 - Measurement systems;
 - Process capability.

4. Analyse*

Prof. Paulo Peças, Eng. Diogo Jorge (in person) and Kamran Zamir (online broadcast)

25 June - Saturday, 09h00/17h00

- Identify and verify root causes:
 - Sources of process variation;
 - Cause-effect analysis;
 - Process waste analysis;
 - Bottleneck analysis and takt time calculation;
 - Failure modal analysis;
 - Relationships between variables and modelling.

5. Improve

Eng. Diogo Jorge

1 July - Friday, 18h30/21h30, 2 July - Saturday, 09h00/13h00 and 8 July - Friday, 18h30/19h30

- Develop future state and implement;
- Generation and selection of potential solutions;
- Elimination of process waste;
- Reduction of cycle time and/or lead time;
- Implementation plan;
- Resistance to change.

6. Control

Prof. Paulo Peças

8 July - Friday, 19h30/21h30, 9 July - Saturday, 09h00/13h00 and 15 July - Friday, 18h30/20h30

- Maintain and control improvements:
 - Statistical process control (SPC);
 - Visual management;
 - Sustaining improvements;
 - How to close a project.

*This session will be in English. The trainers Prof. Paulo Peças and Eng. Diogo Jorge will be in the session in person and Kamran Zamir will be in the session in online broadcast.

STATISTICS



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Paulo Peças, Professor at IST



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