

## Clackamas Community College

### Online Course/Outline Submission System

#### Published Requests

QS-123 Six Sigma Concepts and Tools (Yellow Belt)

General education certified:  Yes  **No**

- Writing
- Oral Communication
- Arts and Letters
- Science & Computer Science
- Mathematics
- Social Science
- Cultural Literacy
- Health & Physical Education

Approved Date (mm/dd/yyyy):  /  /

#### Section #1 General Course Information

**Department:** Manufacturing

**Submitter**

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**Course Prefix and Number:** QS - 123

**# Credits:** 4

**Contact hours**

Lecture (# of hours): 40

Lec/lab (# of hours):

Lab (# of hours):

Total course hours: 40

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

**Course Title:** Six Sigma Concepts and Tools (Yellow Belt)

**Course Description:**

Provides an introduction an overview of the Six-Sigma manufacturing journey in the cultural transformation of an organization. It provides participants an overview of the Six-Sigma process as used by Industry. The course discusses the fundamentals, concepts, and tools of Six-Sigma including: Process mapping, Pareto and scatter diagrams, root cause analysis, 5S,PDCA,COPQ,DPMO and SIPOC.

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**Type of Course:** Career Technical Supplementary

**Reason for the new course:**

Industry request

**Can this course be repeated for credit in a degree?**

**No**

**What is the target audience/industry for this class?**

Manufacturing

**Are there prerequisites to this course?**

**No**

**Are there corequisites to this course?**

**No**

**Are there any requirements or recommendations for students taken this course?**

**Yes**

**Recommendations:** Recommendation Math 50 or higher

**Requirements:**

**Are there similar courses existing in other programs or disciplines at CCC?**

**No**

**Will this class use library resources?**

**Yes**

**Have you talked with a librarian regarding that impact?**

**No**

**Is there any other potential impact on another department?**

**No**

Does this course belong on the Related Instruction list?

**No**

GRADING METHOD:

A-F or Pass/No Pass

**Audit: Yes**

When do you plan to offer this course?

**Not every term**

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

**No**

Will this course appear in the college catalog?

**No**

Will this course appear in the schedule?

**No**

Student Learning Outcomes:

Upon successful completion of this course, students should be able to:

1. Describe the Six Sigma and Lean Process improvement similarities and differences
2. Calculate COPQ and DPMO
3. Explain the key elements of statistics used with Six-Sigma
4. Create a Pareto and a root cause analysis for an existing problem
5. Organize and present improvement data
6. Create SIPOC (supplier, inputs, process, outputs and customers), scatter and cause and effect diagrams
7. Map an organizational flow process
8. Describe the parts of 5S
9. Use basic six-sigma tools to select a solution to a process problem

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***This course does not include assessable General Education outcomes.***

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Major Topic Outline:

Six Sigma Introduction

- Process based costs
- Overview of statistics
- Pareto analysis
- Organizing and presenting data
- SIPOC (supplier, inputs, process, outputs and customers)
- Mapping the process
- Cause and effect diagrams
- Scatter diagrams
- Selecting a solution
- Controlling the process
- Control charts
- Introduction to process capacity
- Process capacity assessment
- Voice of the customer
- 5S
- Change management

Does the content of this class relate to job skills in any of the following areas:

- |                                      |           |
|--------------------------------------|-----------|
| 1. Increased energy efficiency       | <b>No</b> |
| 2. Produce renewable energy          | <b>No</b> |
| 3. Prevent environmental degradation | <b>No</b> |
| 4. Clean up natural environment      | <b>No</b> |
| 5. Supports green services           | <b>No</b> |

Percent of course: 0%

First term to be offered:

**Specify term:** Winter 2016

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