Full Title | Six Sigma Green Belt Quality (TK)
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Status | Uploaded to Banner
Start Term | 2020
NFQ Level | 07
ECTS Credits | 05
Module Code | MANU07032
Duration | Stage - (26 Weeks)
Grading Mode | Numeric
Department | Mechanical & Industrial Eng
Module Author | Carine Gachon
Co Authors | Padraig Audley

Module Description
An introduction to Six Sigma Green Belt, which will both explain the concepts and use the techniques of Six Sigma.

Learning Outcomes
On completion of this module the learner will/should be able to:

1. Explain the Define, Measure, Analyse, Improve and Control steps in Six Sigma. Describe lean engineering and the origins of Six sigma.
2. Use 'Define' phase tools to decide on the process improvement of a Six Sigma project
3. Determine the current performance using a variety of 'Measure' tools
4. Use the 'Analyse' tools, including inferential statistics to determine the issues to be addressed.
5. Use the 'Improve' tools, to experiment and assess the process optimisation.
6. 'Control' the process to verify the variances are corrected, select appropriate statistical process control (SPC) techniques.

Indicative Syllabus
Overview: Six Sigma and the Organization, Six sigma and organizational goals, Lean principles in the organization, Design for Six Sigma (DFSS) in the organization, Quality Function Deployment (QFD) and failure mode and effect analysis (FMEA).
Six Sigma - Define: Process Management for Projects Project management basics : Business results for projects
Six Sigma - Measure: Process analysis and documentation, Collecting and summarising data, Probability and statistics, Six Sigma Measure: Measurement system analysis, Process capability and performance
Six Sigma - Analyse: Exploratory data analysis, Hypothesis testing (z, t and p), inferential statistics and Analysis of variances (ANOVA)
Six Sigma - Improve & Control: implementing and validate solutions. Selection and application of Statistical process control (SPC)

Teaching and Learning Strategy
This module is delivered online. Theory will be introduced through the online platform and practical application will be learned in a virtual lab environment.

Assessment Strategy
The assessment strategy of this module will be a combination of:
- Exam type Assessments.
- Continuous Assessment.
Industry Project

A practical assessment will represent 30% of the module (Minitab, statistics and computer based). They will then have an industry project for 20% to recognise the transfer of acquisition of competences to the workplace. Finally, they will have an exam at the end of the module worth 50%.

Repeat Assessment Strategies

Students will be given the opportunity to take a repeat examination.

Indicative Coursework and Continuous Assessment:

<table>
<thead>
<tr>
<th>Form</th>
<th>Title</th>
<th>Percent</th>
<th>Week (Indicative)</th>
<th>Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>Mid term Assessment</td>
<td>30 %</td>
<td>Week 13</td>
<td>1,4</td>
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<tr>
<td>Project</td>
<td>Industry project</td>
<td>20 %</td>
<td>OnGoing</td>
<td>1,2,3,4,5,6</td>
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End of Semester / Year Formal Exam:

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<th>Learning Outcomes</th>
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<td>Exam</td>
<td>50 %</td>
<td>End of Term</td>
<td>1,2,3,4,5,6</td>
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Blended Delivery Mode Average Weekly Workload:

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<th>Hours</th>
<th>Frequency</th>
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</thead>
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<td>Online support and monitoring</td>
<td>Not Specified</td>
<td>2</td>
<td>Weekly</td>
<td>2.00</td>
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Recommended Reading Book List


Journal Resources

Online Resources

http://asq.org/index.aspx

Other Resources

Lecturers Moodle Page

Programme Membership