## Course Description

<table>
<thead>
<tr>
<th><strong>Department</strong></th>
<th>06 Applied Sciences and Mechatronics</th>
</tr>
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<tbody>
<tr>
<td><strong>Course title</strong></td>
<td>Quality Management and Applied Statistics</td>
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<tr>
<td><strong>Hours per week (SWS)</strong></td>
<td>4</td>
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<tr>
<td><strong>Number of ECTS credits</strong></td>
<td>6</td>
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<tr>
<td><strong>Course objective</strong></td>
<td>Knowledge on Quality Management System based on ISO standards. Knowledge how to apply QM tools and methods in business processes. Knowledge how to qualify and assess hardware and software and how to qualify products Describing data with statistical methods Developing an understanding of probability distributions Using statistics for testing of a hypothesis</td>
</tr>
<tr>
<td><strong>Prerequisites</strong></td>
<td>Mathematics I</td>
</tr>
</tbody>
</table>
G. Linß, Qualitätsmanagement für Ingenieure, 3. aktualisierte und erweiterte Auflage, fv Fachbuchverlag Leipzig im Carl Hanser Verlag, 2011  
R. Schmitt, T. Pfeifer, Qualitätsmanagement Strategien, Methoden, Techniken, 4. völlig überarbeitete und erweiterte Auflage,Carl Hanser Verlag, 2010  
M. Sachs, Wahrscheinlichkeitsrechnung und Statistik für Ingenieurstudenten an Fachhochschulen, 2. erweiterte Auflage, Hanser, 2006  
D. Montgomery, Design and Analysis of Experiments, Wiley, 2006  
S. Ross, Statistik für Ingenieure und Naturwissenschaftler, Spektrum, 2006 |
| **Teaching methods**    | Lessons with exercises                 |
| **Assessment methods**  | 100% written exam                      |
| **Language of instruction** | English                              |
| **Name of lecturer**    | Prof. Holler, Dr. Preussger           |
| **Email**               | holler@hm.edu                         |
| **Link**                |                                        |
Courses in English
Course Description

QUALITY MANAGEMENT

Course content

Norms and standards
ISO 9000 and 9001
Application standards of ISO 9001
Business process management: process model, roles and responsibilities, controlling, continuous improvement
Software Quality Metric (ISO 9126)
Qualification of products
Continuous improvement in production: SPC, AQL, MSA, Supplier Management, PDCA, DMAIC
Risk management: DOE, FMEA, Pareto Diagram, FTA, design review, milestone release
QM tools in production: change management, complaint management (FAR, 8D)
The quality organization: resource management, customer satisfaction, documentation, Audits

Exercises how to apply QM tools
Review of application scenarios

APPLIED STATISTICS

Course content

Descriptive statistics in one and two dimensions
Mean, median, variance
Linear regression
Probability theory
Probability density function
Probability distribution
Binomial, normal and poisson distribution

Statistical hypothesis testing

Exercises with statistics software, e.g. Excel

Remarks