

**Syllabus:
Methoden des Qualitätsmanagement /
Methods of Quality Management
(BREM3111)**

Dr. Meyer

Hochschule Pforzheim / Pforzheim University

Lehrveranstaltung:	BREM3111 – Methoden des Qualitätsmanagement / Methods of Quality Management
Workload:	2 SWS - 3 ECTS Credits
Level:	Berufsqualifizierendes akademisches Niveau - 6. Studiensemester
Voraussetzungen:	Mind. 50 erzielte Credits aus dem ersten Studienabschnitt
Gültigkeit:	Wintersemester 2020/21
Lehrender:	Dr. Bernd Meyer / Email: lean.alumnus@gmail.com Sprechstunde: nach Vereinbarung Office hours: on appointment
Ort und Zeit:	See LSF

Beschreibung:

The course is organized as a lecture, but throughout the course special emphasis is met on discussion and interaction with the students. We will critically discuss the theory, its practical application and its implications for use in an industrial company. The materials – slides and questions & problems – will be distributed to the students on the e-learning platform. Practical problems will be presented (focusing the automobile industry) and often calculations will be done using the methods taught. I appreciate the interaction with students in class very much – it helps me to understand your thoughts and it helps you to better understand the topic. I invite you to actively “think along”, ask questions and discuss with me in the lecture!

Key topics will be:

- Understanding the basic concepts of product & service quality, know how to solve problems in quality management functions and how to apply the most important tools of quality management.
- Understanding the concept of continuous quality improvement and its practical implication.
- Know how to apply quality management methods to address material and energy efficiency aspects in a company.

Besonderheiten:

Dozent: Dr. Bernd Meyer

Lernergebnisse bzw. Qualifikationsziele:

The students

- have basic knowledge on relevant methods of quality management,
- know the basics on quality management systems with the relevant ISO standards,
- can apply important analysis methods on practical problems.

Beitrag des Faches zur Gesamtzielerreichung des Studiengangs:

Programmziel	Beitrag
<p><i>Fachwissen</i></p> <p>Die Studierenden weisen nach, dass sie ein solides Grundwissen in Betriebswirtschaftslehre haben.</p> <p>Die Studierenden weisen nach, dass sie über differenziert und fundierte volkswirtschaftliche Kompetenzen verfügen.</p> <p>Die Studierenden beherrschen die juristische Methode der Falllösung nach Anspruchsgrundlagen.</p> <p>Studierende können betriebswirtschaftliche Probleme mit quantitativen Methoden lösen.</p>	<p>-</p> <p>-</p> <p>-</p> <p>-</p>
<p><i>Nutzung von Informationstechnik</i></p> <p>Die Studierenden beherrschen gängige Computerprogramme zur Lösung betriebswirtschaftlicher Aufgaben.</p> <p>Die Studierenden sind in der Lage, die im betrieblichen Umfeld vorzufindenden Informationssysteme effektiv zu nutzen.</p>	<p>-</p> <p>-</p>
<p><i>Kritisches Denken und analytische Fähigkeiten</i></p> <p>Die Studierenden sind in der Lage analytische Fähigkeiten konstruktiv und kritisch auf komplexe Problemstellungen anzuwenden.</p>	<p>Critical assessment of the application of quality management methods and tools in a practical application (esp. with respect to cost-benefit considerations) => discussions in the lecture, exam</p>
<p><i>Ethisches Bewusstsein</i></p> <p>Die Studierenden können wirtschafts- und unternehmens- ethisch fundierte Lösungs- und Kommunikationsstrategien entwickeln und auf typische wirtschaftliche Entscheidungsprobleme anwenden.</p>	<p>Identification of ethical questions and conflicts when addressing target conflicts in quality management (e.g. quality vs. time vs. costs / company interest vs. supplier interest, company interest vs. customer interest) => discussions in the lecture, exam</p>
<p><i>Kommunikationsfähigkeit</i></p> <p>Die Studierenden sind in der Lage, komplexe Sachverhalte in klarer schriftlicher Form auszudrücken.</p>	<p>Learn how to communicate with technical experts on quality management and other management issues => exam & presentation !</p>

<p>Die Studenten zeigen ihre mündliche Ausdrucksfähigkeit durch überzeugende Präsentationen und Vorträge.</p>	<p>Work together in small teams on practical examples in the lecture, present results in the lecture, discuss with students and instructor. => practical exercises in the lecture (group work with presentation of the work results)</p>
<p>Teamfähigkeit Im Rahmen praktischer Aufgabenstellungen zeigen die Studierenden, dass sie in der Lage sind, erfolgreich im Team zu arbeiten.</p>	<p>Work together in small teams on practical examples in the lecture, present results in the lecture, discuss with students and instructor. => practical exercises in the lecture (group work with presentation of the work results)</p>
<p>Solides Grundwissen im Bereich Ressourceneffizienz Sicheres und kompetentes Fachwissen / Expert knowledge Sicheres und kompetentes Anwenden von Methoden und Instrumenten / Application of methods and instruments Interpretation und kritische Reflektion der Ergebnisse sowie Entwicklung von Lösungs- & Handlungsalternativen / Interpretation and critical reflection of results and development of solution and action alternatives</p>	<ul style="list-style-type: none"> • Understand the basic concepts of product and service quality. • Know how to solve problems in quality management functions, know and apply the most important tools of quality management. • Understand the concept of continuous quality improvement and its practical implication. • Understand how quality can be measured at different levels (e.g. customer satisfaction, production processes...). • Understand how measuring devices can be used, what the concept of repeatability and reproducibility (R&R) means and how R&R studies can be conducted in practice. • Understand how quality planning for products, services and manufacturing works and which aspects have to be regarded. • Understand the method "Quality Function Deployment (QFD)" and be able to apply parts of it for practical problems. • Understand the basic concepts of Statistical Process Control (SPC) and be able to calculate practical examples. • Understand the principles of acceptance sampling. • Know how to address risk and how to perform simple calculations for reliability • Understand the basic ideas behind technical risk management and understand the concept of FMEA. • Know the basics on quality management systems with the relevant ISO standards • Know how to apply quality management methods to address material and energy efficiency aspects in a company. <p>Critical assessment of the application of quality management methods and tools in a practical application (esp. with respect to cost-benefit considerations)</p> <p>Identification of ethical questions and conflicts when addressing target conflicts in quality management (e.g. quality vs. time vs. costs / company interest vs. supplier interest, company interest vs. customer interest)</p> <p>=> exam, discussions and exercises in the lecture!</p>

Didaktisches Konzept:

The course is organized as a lecture, but throughout the course special emphasis is met on discussion and interaction with the students. We will critically discuss the theory, its practical application and its implications for use in an industrial company. The materials – slides and questions & problems – will be distributed to the students on the e-learning platform. Practical problems will be presented (focusing the automobile industry) and often calculations will be done using the methods taught. I appreciate the interaction with students in class very much – it helps me to understand your thoughts and it helps you to better understand the topic. I invite you to actively "think along", ask questions and discuss with me in the lecture!

Zeitlicher Ablauf:

1 Introduction into quality management

What is quality? / Defining quality / Product, process and service quality / Why is quality so important / Reasons for failed quality / Basic quality processes / Management systems & quality management

- 2 Basic tools for quality improvement
Problem-solving in quality management / 7 tools of quality / Continuous quality improvement / quality tools from the lean production philosophy
- 3 Measuring quality
Dimensions, measures and metrics / Obtaining input from customers / Measuring quality / Measuring devices / Principles of metrology / Repeatability and reproducibility studies / SixSigma
- 4 Quality planning
Quality planning for products, services and manufacturing / Quality function deployment (QFD)
- 5 Quality control and quality assurance
Methods for quality control in production / Statistical process control (SPC) / Acceptance sampling / Responsibilities and feedback loops / Analyzing risk (incl. reliability) / Technical risk management (incl. FMEA)
- 6 Quality management systems & standards
ISO 9000, 9001 and 9004 / Industry specific standards / Quality audits
- 7 Suggested literature
 - Sower, Victor (2001): Essentials of Quality, Wiley
 - Seghezzi, H.D. et al. (2013): Integriertes Qualitätsmanagement, Hanser

Leistungsnachweis:

The grading will be based upon a 60 minutes written exam at the end of the semester and a group presentation in class. Relevant for the exam are the topics, which were talked about in the lecture. It will be assessed in several questions, whether the students have understood the most important content and methods of the lecture and can apply them on concrete examples.

The following assessment scheme is applied:

- 'Sehr gut': represents exceptional work, far above average.
- 'Gut': represents good work, above average.
- 'Befriedigend': represents average work.
- 'Ausreichend': represents below average work with considerable shortcomings.
- 'Mangelhaft': is just exceptional work in the wrong direction or with unacceptable shortcomings.

In the exam, you can use a non-programmable calculator from the standard list, specified at <http://www.hs-pforzheim.de/De-de/Wirtschaft-und-Recht/Studienuebergreifende-Fachgebiete/Quantitative Methoden/RundumdiePruefungen/Seiten/Inhaltseite.aspx>

Verhaltensregeln und wissenschaftliche Ehre

It is my intention to grade everybody in the same, fair way. Equal performances are equally graded, no matter who the person is.