# Operations Management

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| Module | | Operations Management | | | | | |
| Module Code | | MGT60138- | | | | | |
| Module Coordinator | | Strohhecker, Jürgen | | | | | |
| Last Update | | 2016/11/02 | | | | | |
| Target Group | | Programme(s) | | | B.Sc. | | |
| | | Term | | | 7th semester | | |
| | | Compulsory/Elective Module | | | Compulsory Module | | |
| | | Module Duration | | | 1 Semester | | |
| | | Credits: | | | 6 | | |
| | | Frequency | | | Annually | | |
| | | Language of instruction | | | English | | |
| Workload: | 150 h | Contact hours: | 44 h | Independent Learning: | 60 h | Assignments: | 46 h |
| Prerequisites | | Mathematics, Stochastic | | | | | |
| Usability in other Modules/Programmes | | Operations Modeling, Operations Project Field Study, Supply Chain Management | | | | | |

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| Intended Learning Outcomes | Knowledge of a broad set of operations management tools including quantitative models (e.g., Little's Law, EOQ, Newsvendor model, Order-up-to model) and qualitative strategies (e.g., Just-in-Time Delivery, Staffing) that can be used to better match supply with demand and thereby increase organizational performance.<br><br>Knowledge:<br>On successful completion of the module, the participants will have knowledge of a wide range of operations management tools, i.e. they can<br>• describe the operations management tools introduced in this module<br>• explain and operate the toolset introduced in this module<br>• evaluate the tools and discuss their strength and weaknesses<br>Skills:<br>On successful completion of the module, students will have the proven ability to apply advanced knowledge in Operations Management and to solve practice-oriented challenges, i.e. they can<br>• analyze, structure and classify operations management challenges in practice and theory<br>• identify the problem adequate quantitative model or qualitative strategy<br>• apply the adequate quantitative model or qualitative strategy to solve an operations management challenge<br>• use spreadsheets to support quantitative modeling<br>Competencies:<br><br>Successful module participants develop the requisite know-how to provide responsible contributions in establishing concepts and processes in operations management. They acquire the ability to further develop and adapt to the needs in practice. They can<br>• present operations management challenges to a broad audience<br>• argue competently about problem solution strategies |
| Module Structure | Operations Management |

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| Module Overview | Economic theory assumes that on efficient markets prices adjust to match supply with demand: if there is excess demand, prices rise; if there is excess supply, prices fall. However, most managers in most enterprises would prefer to be able to match supply and demand without adjusting prices. To them excess demand means lost revenue and excess supply a waste of resources. They do not like the thought that an overproduction of the product that they are responsible for has to be scrapped or sold at discount prices. This course is about how companies can design their operations to better match supply with demand and thereby gain a significant competitive advantage over its rivals. A better match of supply and demand can be achieved by using an adequate set of operations management tools, more specifically, by implementing rigorous quantitative models and well-understood qualitative operational strategies. This module introduces a broad range of operations management tools and aims at teaching the participants how and when to apply them in practical settings.<br>The contents of the 11 sessions in total are built up as follows:<br>Lecture Topic Book Chapter<br>1 Introduction<br>Process View CT1<br>CT2<br>2 Sailboat Game -<br>3 Evaluating Process Capacity CT3<br>4 Estimating and Reducing Labor Cost CT4<br>5 Batching and Other Flow Interruptions CT7<br>6 Variability - Waiting Time Problemes CT8<br>7 Variability - Throughput Losses CT9<br>8 Quality Management<br>Leand Operations and the Toyota Production System CT10<br>CT11<br>9 Betting on Uncertain Demand: The Newsvendor Model CT12<br>10 Assemble-to-Order, Make-to-Order and Quick Response CT13<br>11 Service Levels and Lead Times in Supply Chains: The Order-p-to Model CT14 |
| Forms of teaching, methods and support | The course is taught primarily through tutorials and practiced in a large number of exercise tasks and further developed with planning and simulation case studies and games. The course is based on the one text book shown under recommended literature. Participants are expected to cover the course contents by preparation and follow-up work as well as undertaking a number of the tasks in their own study time. Exam preparation is based on exercise tasks and a sample written test. |

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<td>Type of Assessment in the Module and Performance Points</td>
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<tr><th>Type of examtination</th><th>Duration or length</th><th>Performance Points</th><th>Due date or date of exam</th></tr>
<tr><td>Written exam</td><td>80 minutes</td><td>80</td><td>During the exam week</td></tr>
<tr><td>In-class participation</td><td></td><td>40</td><td>During the course</td></tr>
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Examination requirements:<br>
Exams in operations management assume that the set of tools covered in the book chapters listed above have been thoroughly understood and can be applied to practical challenges. The examination tasks have the same level of difficulty as the practice problems included in the textbooks and a mock exam handed out to the participants. Exams consist of both quantitative and qualitative challenges for operations managers.<br>
In-class participation is evaluated based on different contributions, e.g. OM warm-up/OM in action discussion problems, problem presentations, group exercises, case study discussion, excel exercises, essays etc.
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<td>Recommended Literature</td>
<td>The lecture is based on the following textbook:<br>
Cachon/Terwiesch: Matching Supply with Demand – An Introduction to Operations Management, 3rd edition, McGrawHill, 2013A print as well as an ebook version of the book can be bought from the McGraw-Hill UK shop. (Attention: The US version of the book is much more expensive!).<br>
In addition, all relevant chapters are included in a customized ebook, which can be bought via the online shop (ISBN 9781308892504).<br>
As an alternative (and addition), the following textbook can be used:<br>
Cachon/Terwiesch: Operations Management, McGrawHill, 2016</td>
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