

Seminar Process Simulation

Lecturer	Prof. Dr. Maren Martens
Conditions of participation	In terms of form: None
	In terms of content: None
Examination	Scientific Paper
Pre-examination requirements	Active participation in group discussions, presentation of the scientific paper
Part of final grade	Yes
Learning outcomes/ competencies	<p>The students shall be able to answer a specific scientific question within a paper in English language, using relevant methods and means of scientific writing.</p> <p>In addition, they gained basic knowledge about computer based simulation and where its usage can be helpful.</p> <p><u>Knowledge/Understanding:</u></p> <p>The students know and understand the fundamentals of science and research and how they are applied to scientific papers. They learned correct citation and formatting of a scientific paper.</p> <p>In addition, they understand the range of applications as well as the objectives of process simulation; they can evaluate situations in which simulation is a helpful tool for process optimization. They understand how simple business processes can be modeled using a simulation tool (in general SimQuick).</p> <p><u>Abilities/Transfer:</u></p> <p>The students can properly answer relevant research questions within a study paper.</p> <p>In addition, they can identify weak points and bottlenecks of simple business processes from simulation results and derive suggestions for process improvements.</p>
Contents	<p>Part I:</p> <p>Introduction to the philosophy of science and standards in scientific writing (e.g., bachelor thesis)</p> <p>Part II:</p> <p>Simulation of economic processes, e.g., inventory management, manufacturing, waiting lines, project management</p> <ul style="list-style-type: none"> • Areas of application and objectives of process simulation • Handling uncertainty • Implementing a process simulation with a computer • Analysis of simulation results/optimization of processes
Media	Beamer with Laptop, Blackboard, Visualizer, Computer

Literature	<ul style="list-style-type: none">• Gower, B. (2014): Scientific Method. An Historical and Philosophical Introduction, New York: Routledge.• Skern, T. (2009): Writing Scientific English. A Workbook, Wien: UTB GmbH.• Hartvigsen, D. (2016): SimQuick. Process Simulation with Excel, 3rd Edition. Charleston, SC: Create Space.• Law, A. M. (2015): Simulation Modeling and Analysis, 5th Edition. New York, NY: McGraw-Hill Education.
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