inf502 - Simulation

Module label  Simulation
Module code    inf502
Credit points  6.0 KP
Workload       180 h

Used in course of study
- Master's Programme Business Informatics > Bereichswahlmodule
- Master's Programme Computing Science > Angewandte Informatik
- Master's Programme Engineering of Socio-Technical Systems > Systems Engineering

Contact person

Module responsibility
- Axel Hahn
- Jürgen Sauer

Authorized examiners
- Axel Hahn
- Jürgen Sauer

Entry requirements

Skills to be acquired in this module

Simulation is a major tool for gaining knowledge about systems and their behavior. It can be used to gain system understanding and prediction future system status. The module covers mathematical basic as well a basic simulation technology. The module completes itself by addressing application examples. By seminar and practical work, the students get hands on experience of simulation technologies.

Professional competence
The students:

- get an overview on methods, tools and application areas of simulation. They know what simulation can do and what are its limitation. Covered application are mainly in transportation and production domain.

Methodological competence
The students:

- know simulation technologies and model building basics. They understand the handling of time and problems of discretization. After lecture students can solve problems with simulation. This includes modelling, use of simulation environment and evaluation of results. Cause of practical use, the independent handling of research questions and the use of simulation as research method will be learned.

Social competence
The students:

- gain team and social skills by self-organized development of simulation.

Self-competence
The students:

- can apply simulation technologies on scientific research questions.

Module contents
In lectures the students get background information and simulation basics. Then they apply their knowledge by developing an own simulation by using state of the art simulation environments.

Reader’s advisory
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<th>Links</th>
<th>Languages of instruction</th>
<th>German, English</th>
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<td>Duration (semesters)</td>
<td>1 Semester</td>
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<tr>
<td>Module frequency</td>
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<td>Module capacity</td>
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<td>Modulart</td>
<td>je nach Studiengang Pflicht oder Wahlpflicht</td>
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<td>Vorkenntnisse / Previous knowledge</td>
<td>students need to have programming skills. Java is preferred.</td>
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<td>Final exam of module</td>
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<th>Course type</th>
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<td>Lecture</td>
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Total time of attendance for the module: 56 h