Recent Advances in Numerical Modeling and Simulation

Module-No./Abbreviation
CE-W04/RANMS

Credits
2 CP

Workload
60 h

Term
2nd Sem.

Frequency
Summer term

Duration
1 Semester

Courses
Recent Advances in Numerical Modeling and Simulation Contact hours
2 SWS (30 h) Self-Study
30 h

Group Size:
No Restrictions

Prerequisites
Finite Element Methods in Linear Structural Mechanics (CE-P05)

Learning goals / Competences
After successfully completing the module, the students
• gain insight into the current research in the field of numerical methods in structural mechanics based on selected research topics,
• have skills on selected numerical simulation approaches and its application in engineering,
• have tested research-oriented working.

Content
During the course, selected topics in the field of numerical modeling and simulation in structural mechanics will be presented. The range of topics will be continuously updated to fit with the relevance of current research topics, e.g.:
• the Extended Finite Element Method
• Finite Cell methods
• Isogeometric Analysis
• Peridynamics

For each topic, the theory will be offered in the compact form with emphasis on the algorithms and specific numerical methods. Selected application examples will be demonstrated.

Teaching methods / Language
Seminar (2h / week), / English

Mode of assessment
Seminar presentation 'Recent Advances in Numerical Modeling and Simulation' (30 h, 100 %)

Requirement for the award of credit points
Passed seminar presentation

Module applicability
MSc. Computational Engineering, MSc. Bauingenieurwesen

Weight of the mark for the final score


Module coordinator and lecturer(s)
Prof. Dr.-techn. G. Meschke, Assistants

Further information