

## Module description

---

<b>Name of module:</b>	Advanced Finite Element Method
<b>Keywords:</b>	
<b>Module number:</b>	Not compulsory
<b>Target groups:</b>	exchange students
<b>ECTS - Credits:</b>	2
<b>Language of instruction:</b>	English
<b>Module owner:</b>	Prof. Dr.-Ing. Steffen Greuling
<b>Date of last change:</b>	30.09.2015

### Extent of work (hours)

Workload	Contact hours	Self study	Exam preparation
60	25	25	10

<b>Prerequisites:</b>	
<b>Total target:</b>	Understanding and ability to apply advanced finite element analysis in the design cycle to calculate stresses, strains and stiffness of structures including nonlinear material and geometry behavior.
<b>Module number:</b>	Not compulsory
<b>Module content:</b>	<ul style="list-style-type: none"><li>• Theoretical background of FEM</li><li>• Fundamental equations</li><li>• Numerical accuracy and convergence</li><li>• Applications and influence of boundary conditions</li><li>• Nonlinearity (material, geometry and contact)</li><li>• Lab exercises</li></ul>
<b>Reference material:</b>	Lecture documents
<b>Offered:</b>	WS
<b>Relevance for other study programs:</b>	Automotive Engineering

### Submodules and assessments

<b>Title of submodule:</b>	
<b>Type of instruction / form of learning:</b>	Lecture and lab exercises
<b>Hours per week:</b>	2
<b>Target groups:</b>	exchange students
<b>Aims, learning outcomes:</b>	See above
<b>Estimated student workload:</b>	60 h
<b>Type of assessment:</b>	Project work