

Deep Learning for Engineers					
Module-No./Abbreviation CE-WP33/DLE	Credits 6 CP	Workload 180 h	Term 2 nd Sem.	Frequency Summer Semester	Duration 1 Semester
Courses Deep Learning for Engineers			Contact hours 4 SWS (60 h)	Self-Study 120 h	Group Size: No Restrictions
Prerequisites -					
Learning goals / Competences After successfully completing the module, the students <ul style="list-style-type: none"> • have acquired fundamental skills and knowledge in deep learning, including training concepts and neural network architecture designs, • are able to develop, train and employ deep learning models for scientific applications, • can assess the benefits and limitations of neural networks for their projects. 					
Content The lecture covers deep learning concepts and techniques, including: <ul style="list-style-type: none"> • general ideas and mathematical background • training and regularization methods • neural network architectures (feed-forward, convolutional, physics-informed, autoencoder, ...) • application to scientific and engineering problems • employment on modern computer hardware In hands-on sessions, practical exercises are used to discuss and illustrate the presented content.					
Teaching methods / Language Lecture (2h / week), Exercises (2h / week) / English					
Mode of assessment Written examination (120 min., 100%)					
Requirement for the award of credit points Passed final module examination					
Module applicability -					
Weight of the mark for the final score					
Module coordinator and lecturer(s) Prof. Dr. A. Vogel, Assistants					
Further information					