Module Catalog – Master Program Computational Engineering & EUMaster4HPC

Winter Term 2026/27

Note that standard study plans for all technical application fields are to be found on the CE website!

General Modules (max. 10 ECTS)

Module	SWS L+E+S+P	Total ECTS	Language	Exam	Department	Responsible Chair	WS/SS
HPC Project		5					Full list is found in the Campo
Seminar		5					Full list is found in the Campo

Mathematics (min. 20 ECTS)

Module	SWS L+E+S+P	Total ECTS	Language	Exam	Department	Responsible Chair	WS/SS
Algorithms of Numerical Linear Algebra	2+2+0+0	7,5	EN	352989	INF	Lehrstuhl für Informatik 10 (Systemsimulation)	WS
Functional Analysis for Engineers	2+2+0+0	5	EN	32301/ 32302	INF	Professur für Informatik (Numerische Simulation mit Höchstleistungsrechnern)	WS
Optimization for Engineers	2+1+0+0	7,5	EN	40501 40602	Math	Controlling IngMath	SS

Computer Science (min. 40 ECTS)

Module	SWS L+E+S+P	Total ECTS	Language	Exam	Department	Responsible Chair	WS/SS
Architectures of Supercomputers (Architekturen von Superrechnern)	2+2+0+0	5	EN	44601	INF	Lehrstuhl für Informatik 3 (Rechnerarchitektur)	WS

High End Simulation in Practice	2+4+0+0	7,5	EN	45101	INF	Lehrstuhl für Informatik 10 (Systemsimulation)	SS
Programming Techniques for Supercomputers (Programmiertechniken für Supercomputer-VU)	4+2+0+0	7,5	EN	43401	INF	Professur für Höchstleistungsrechnen	SS
Practical Parallel Algorithms with MPI	2+2+0+0	5	EN	33111	INF	Professur für Höchstleistungsrechnen	WS
Advanced Programming Techniques	4+2+0+0	7,5	EN	465562	INF	Lehrstuhl für Informatik 10 (Systemsimulation)	WS
Computer Architecture	2+4+0+0	7,5	EN	798810	INF	Lehrstuhl für Informatik 10 (Systemsimulation)	WS

Technical Application Field: High Performance Computing (HPC) (Beginners as of WS 2026/27)

Module	SWS L+E+S+P	Total ECTS	Language	Exam	WS/SS	Dozent	Responsible Chairs	Prüfung
Advanced Programming Techniques (AdvPT)	4+2	7,5	EN	465562	WS	Prof. Dr.-Ing. Harald Köstler	Chair of Computer Science 10 (System Simulation)	Klausur, 60 Min
High End Simulation in Practice (HESP)	2+4	7,5	EN	45101	SS	Prof. Dr.-Ing. Harald Köstler	Chair of Computer Science 10 (System Simulation)	Mündlich, 30 Min
Computer Architecture (CA/RA)	2+2+2	7,5	EN		WS	Tobias Baumeister	Chair of Computer Science 3 (Computer Architecture)	Klausur, 90 Min + Übung
Computer Architecture (CA/RA)	2+2	5	EN		WS	Tobias Baumeister	Chair of Computer Science 3 (Computer Architecture)	Klausur, 90 Min
Programming Techniques for Supercomputers (PTfS)	4+2	7,5	EN	278169	SS	Prof. Dr. Gerhard Wellein	Professorship for High Performance Computing	Klausur, 90 Min
Simulation und Wissenschaftliches Rechnen 1 (SiWiR1)	2+2+2	7,5	GER		WS	Prof. Dr. Christoph Pflaum	Professorship for Numerical Simulation and High-Performance Computing	Klausur, 90 Min
Simulation und Wissenschaftliches Rechnen 2 (SiWiR2)	2+2+2	7,5	GER+EN		SS	Prof. Dr. Christoph Pflaum	Professorship for Numerical Simulation and High-Performance Computing	Klausur, 90 Min

Abbreviations:

L Lecture	P Practical Exercise	EN English	**Bold** mandatory modul
E Exercise	WS Winter Term	GER German	
S Seminar	SS Summer Term	ECTS European Credit Transfer System	

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