HAW Kiel
Hochschule für Angewandte Wissenschaften Kiel
Kiel University of Applied Sciences

ACC - Advanced Cloud Computing

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General information	
Module Code	ACC
Unique Identifier	AdvCloudComp-01-MA-M
Module Leader(s)	Prof. Dr. Ehlers, Jens (jens.ehlers@haw-kiel.de) Prof. Prieß, Malte (malte.priess@haw-kiel.de)
Lecturer(s)	Prof. Dr. Ehlers, Jens (jens.ehlers@haw-kiel.de) Prof. Prieß, Malte (malte.priess@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - MCS - Computer Science (PO 2023, V1) Module type: Pflichtmodul Semester: 1, 2
Study Subject: M.Sc. - MIE - Information Engineering (PO 2022, V3) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students know the fundamentals of cloud computing, virtualization, containers and cluster management. They know modern cloud platforms, cloud-native architectures and common cloud security issues.
Students can employ cloud platforms, cloud-native and containerization technologies for real-world problems.
Students have experience in organizing cloud computing projects, they can solve project tasks and present their results.
Students are able to perform professional work in the field of cloud computing and to assess challenges in cloud environments. Furthermore, they can understand and select relevant scientific literature concerning the field of cloud computing.

Content information	
Content	* Fundamentals of cloud computing * Virtualization, containers and cluster management (e.g. Docker and Kubernetes) * Cloud-native applications, microservices und serverless architectures * Cloud providers (e.g. Google Cloud Platform, Microsoft Azure, Amazon Web Services) * Monitoring of cloud services

Literature	- Nane Kratzke: Cloud-native Computing – Software Engineering von Diensten und Applikationen für die Cloud; Hanser - Douglas Comer: The Cloud Computing Book – The Future of Computing Explained; CRC Press - Sam Newman: Building Microservices – Designing Fine-Grained Systems; O'Reilly - Brendan Burns et al.: Kubernetes – Up and Running; O'Reilly

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag	2
Labor	2

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
ACC - Projektbezogene Arbeiten	Method of Examination: Projektbezogene Arbeiten Weighting: 100% wird angerechnet gem. § 11 Absatz 2 PVO: No Graded: Yes Remark: The students work on a current cloud technology topic, write a project report and present their work.

Miscellaneous	
Recommended Prerequisites	- Knowledge about version control with Git - Familiar with command-line interfaces - Efficient use of at least one programming language