Department	07 Computer Science and Mathematics
Course title	Secure Systems
Hours per week (SWS)	4
Number of ECTS credits	5
Course objective	The main course objective is to create software solutions for IT-security-optimized systems. The course is designed as a project-oriented course. Students work in independent teams on secure systems to sharpen their abilities to acquire knowledge in a self-directed way, to find creative solutions, to effectively communicate in teams as well as to learn organization and time management techniques required for project management functions later in students' careers.
Prerequisites	Basic knowledge of IT security (for example, from studying Bachelor Computer Science or a comparable degree)
Recommended reading	J. Viega, Building Secure Software: How to Avoid Security Problems the Right Way, Addison-Wesley, 2001 M. Schumacher et al., Security Patterns: Integrating Security and Systems Engineering, Wiley Series, 2005 L. Brotherstone, Defensive Security Handbook: Best Practices for Securing Infrastructure, O'Reilly, 2017
Teaching methods	Presentation slides with beamer, blackboard, flipchart, etc.
Assessment methods	Term paper and final results presentation
Language of instruction	English
Name of lecturer	Prof. Dr. Peter Trapp
Email	peter.trapp@hm.edu
Link	https://www.cs.hm.edu/die_fakultaet/ansprechpartner/professoren/trapp/index.de.html
Course content	As part of the project study "Secure Systems", a small but complex project with a focus on IT security is created, for example the development and implementation of an IT-based human resource system as a client-server application with the best possible IT security. At the beginning, the task is defined via joint brainstorming and then implemented by a procedure in project phases. Special emphasis is placed on the implementation of dedicated IT security activities such as determination of protection needs, threat and risk analysis, creation of a dedicated security concept, implementation of security measures and security checks. Results of the individual working groups are presented in lectures. The project work can be carried out with an industrial partner to bring in current industrial requirements, knowledge and skills. Depending on the concept and objectives, the number of participants is 6 to 12 students and the venue can be demand-oriented with an industrial partner.
Remarks	