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**Aktuelle Modulbeschreibung**

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| **Module Number:** | **11897** |
| **Module Title:** | **Security of Resource-constraint Systems** |
|  | Sicherheit von Resourcen-beschränkten Systemen |
| **Department:** | Faculty 1 - Mathematics, Computer Science, Physics, Electrical Engineering and Information Technology |
| **Responsible Staff Member:** | * Prof. Dr. rer. nat. Langendörfer, Peter |
| **Language of Teaching / Examination:** | English |
| **Duration:** | 1 semester |
| **Frequency of Offer:** | Each winter semester odd year |
| **Credits:** | 6 |
| **Learning Outcome:** | The Students know potential security issues of embedded systems. They can analyse embedded systems and identify security issues. They know standard approaches that can help to solve security issues and can develop security concepts for embedded systems. |
| **Contents:** | * Potential attacks and attacker models * Micro controller architectures * Memory management * Operating systems * Micro Kernels * Hypervisor * Security protocols |
| **Recommended Prerequisites:** | Knowledge of the content of the modules   * 12204 : Operating Systems I * 12339 : Operating Systems II (Multi-Level Memory Management) |
| **Mandatory Prerequisites:** | None |
| **Forms of Teaching and Proportion:** | * Lecture / 2 Hours per Week per Semester * Exercise / 2 Hours per Week per Semester * Self organised studies / 120 Hours |
| **Teaching Materials and Literature:** | Information about current literature will be provided at the beginning of the course. |
| **Module Examination:** | Final Module Examination (MAP) |
| **Assessment Mode for Module Examination:** | * Written examination, 90 min. **OR** * Oral examination, 30 min. (with small number of participants)   In the first lecture it will be anounced, if the examination will be offered in written or oral form. |
| **Evaluation of Module Examination:** | Performance Verification – graded |
| **Limited Number of Participants:** | None |
| **Part of the Study Programme:** | * M.Sc. / Cyber Security (research-oriented profile) / Prüfungsordnung 2017 * M.Sc. / Informatik (research-oriented profile) / Prüfungsordnung 2008 - 2. SÄ 2017 |
| **Remarks:** | * Study programme Computer Science M. Sc.: Compulsory elective module in "Applied and Technical Computer Science" (level 400). * Study programme Information and Media Technology M. Sc.: Compulsory elective module in "Dependable HW/SW-Systems". * Study programme Cyber Security M.Sc.: Compulsory elective module in complex "Cyber Security Methods". |
| **Module Components:** | * Lecture: Security of Resource-constraint Systems (HW/SW) * Accompanying exercise * Related examination |
| **Components to be offered in the Current Semester:** | * [122110 Lecture/Exercise Security of Resource-constraint Systems - 4 Hours per Week per Semester](https://www.b-tu.de/qisserver3/rds?state=verpublish&status=init&vmfile=no&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung&veranstaltung.veranstid=74569) * [122111 Examination Security of Resource-constraint Systems](https://www.b-tu.de/qisserver3/rds?state=verpublish&status=init&vmfile=no&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung&veranstaltung.veranstid=79103) |