

**Level of expectations – Information Technology**

Topic	Comprises, amongst others, the following tasks and problem statements:
Information and digital technology	<ul style="list-style-type: none"> <li>• Time and value discretization of signals</li> <li>• Polyadic number systems</li> <li>• Conversion of different number systems (decimal, binary, hexadecimal)</li> <li>• Arithmetic operations with binary numbers</li> <li>• Boolean algebra (AND-/OR-GATE)</li> <li>• Switching functions and networks (Truth Tables)</li> </ul>
Real-time programming	<ul style="list-style-type: none"> <li>• Computing processes (tasks)</li> <li>• Time coordination/synchronization of computing processes</li> <li>• Realtime scheduling</li> <li>• Application of different scheduling algorithms (First-in-first-out, Priority-based, Earlies-Deadline-First, <b>Round Robin</b>)</li> </ul>
Automata	<ul style="list-style-type: none"> <li>• Representation of automata with transition diagrams and tables</li> <li>• Moore and Mealy automaton</li> </ul>
System Design	<ul style="list-style-type: none"> <li>• Unified Modelling Language (UML)</li> <li>• Behavior Model with UML state diagram</li> <li>• Structure Model with UML class diagram</li> </ul>
C Programming	<ul style="list-style-type: none"> <li>• Basics (Statements, Variables, Data Types, Operators)</li> <li>• Boolean expressions</li> <li>• Conditional statements (if...else, switch...case)</li> <li>• Loops (for, while, do...while)</li> <li>• Array</li> <li>• Pointer</li> <li>• Sorting algorithms</li> <li>• File I/O</li> <li>• Functions (call-by-value)</li> </ul>

Note: The exam takes place as an e-test (Platform Moodle) on a computer provided by the university. This means that you have a compiler available for programming tasks and can check and correct your entries. **Attention:** “Prüfen”-Button submits your answers, leading to possible loss of subpoints for the programming tasks.