Online Problems					AR-316
Rota annually WS	**Duration** 1 Semester	**Semester** 3rd (Semester)	**SWS** 3 SWS	**Credit Points** 5	**Workload** 150 h

1	**Modul Structure**				
	Course (Abbreviation)	Type/ SWS	Presence	Self Study	Credit Points
	a) Online Problems	Lecture/ 2 SWS	25 h	65 h	3
	b) Online Problems	Tutorial/ 2 SWS	10 h	50 h	2

2	**Language** English
3	**Content** 1. Competitive Analysis 2. Randomized Algorithms 3. Deterministic Algorithms 4. Game-Theoretic Foundations 5. Request-Answer Games **Literature:** • Allan Borodin, Ran El-Yaniv, ONLINE COMPUTATION AND COMPETITIVE ANALYSIS. Cambridge University Press.
4	**Competencies** The students identify online problems and their characteristics. They are able to apply suitable methods to find algorithmic solutions. They can evaluate approaches with respect to efficiency, performance and complexity. They know how to design new online algorithms based on the knowledge acquired during the lecture.
5	**Examination Requirements** Oral exam (40 min)
6	**Formality of Examination** ☒ Module Finals ☐ Accumulated Grade
7	**Module Requirements (Prerequisites)** Recommended: knowledge in discrete mathematics and foundations of algorithms
8	**Allocation to Curriculum:** Program: Automation & Robotics, Field of study: Robotics, Cognitive Systems
9	**Responsibility/ Lecturer** *Prof. Dr.-Ing. Uwe Schwiegelshohn/* Prof. Dr.-Ing. Uwe Schwiegelshohn