**Name of UNIOS University Unit: Faculty of Electrical Engineering,**

**Computer Science and Information Technology**

**COURSES OFFERED IN FOREIGN LANGUAGE**

**FOR ERASMUS+ INDIVIDUAL INCOMING STUDENTS**

|  |  |
| --- | --- |
| **Department or Chair within the UNIOS Unit**  | **Department of Computer Engineering and Automation** |

|  |  |
| --- | --- |
| **Study program**  | **Master Degree in Computer Engineering** |

|  |  |
| --- | --- |
| **Study level** | **2nd cycle** |

|  |  |
| --- | --- |
| **Course title** | Computer System Reliability and Diagnostics |
| **Course code (if any)** | DR3-01 |
| **Language of instruction** | **English** |
| **Brief course description** | Failures, faults and errors in computer systems: sources and types. Failure distribution and reliability models. Probability density function, cumulative distribution function, hazard function, reliability, availability, failure rate. Reliability definition and models. Reliability of computer system components. Experimental reliability estimation. Integrated circuits reliability. System reliability. Availability and maintainability. Serial and parallel systems reliability. Fault avoidance methods. System redundancy. Space, time and information redundancy. Dynamic and static redundancy. Integrity and dependability of the system. Fault-tolerant system architecture. Fault-tolerant system examples. Fault detection methods. Fault-tolerant methods. Fault detectability and fault tolerance, experimental approach. Software testing and reliability models. Reliability of modern processors.  |
| **Form of teaching** | **Lectures are optional, laboratory practice is obligatory** |
| **Form of assessment** | Successful completion of laboratory practice, tests and oral examination |
| **Number of ECTS** | **7** |
| **Class hours per week** | **5** |
| **Minimum number of students** | **1** |
| **Period of realization**  | ***Winter semester***  |
| **Lecturer** | Tomislav Matić Associate Professor, Željko Hocenski, Full Professor |