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|---|---------------|--------------------------------|------------------------------|
| <b>Study program: Information Technology</b>  |               |                                |                              |
| <b>Course title: SOFTWARE TESTING</b>   |               |                                |                              |
| <b>Teacher(s): Olga M. Ristić, Marjan D. Milošević</b>  |               |                                |                              |
| <b>Course status: mandatory</b>   |               |                                |                              |
| <b>Number of ECTS credits: 6</b>  |               |                                |                              |
| <b>Prerequisite courses: none</b>   |               |                                |                              |
| <b>Course objectives</b><br>Enable students to apply recommended practices, methods, techniques, and tools in the domain of software testing.   |               |                                |                              |
| <b>Learning outcomes</b><br>The student possesses knowledge of principles, techniques, and tools for software testing. They are competent in automating testing processes, testing individual units, as well as entire software systems. Additionally, they will be able to analyze and select appropriate testing tools, design effective tests, and efficiently execute software testing.   |               |                                |                              |
| <b>Content of the course</b><br><i>Theoretical teaching</i><br>Key concepts and classification of software testing. Functional software testing (Black Box Testing). Structural software testing (White Box Testing). Software development models. Agile software testing methods. Tools for software testing. Integration testing. Regression and system testing. Static testing. Defect management.<br><i>Practical teaching</i><br>Manual test case creation. Black box testing methods. White box testing methods. Tools for automated testing. Types of tools. Tools for unit testing (JUnit). Graphical user interface testing. Testing web applications with Selenium.   |               |                                |                              |
| <b>Literature</b><br>[1] Олга Ристић, Стефан Шошић: „Практикум из тестирања софтвера“, Факултет техничких наука у Чачку, 2019, 131 с. ISBN: 978-86-7776-229-2.<br>[2] Миодраг Живковић: „Тестирање софтвера“, Универзитет Сингидунум, Београд, 2018, 246 с.<br>[3] Дражен Драшковић, Драган Бојић: “Тестирање софтвера”, Академска мисао, 2019, 377 с.<br>[4] Adam Leon Smith, Rex Black, James Davenport, Joanna Olszewska, Jeremias Röbler, Jonathon Wright, „Artificial Intelligence and Software Testing“, BCS, The Chartered Institute for IT, 2022, ISBN: 9781780175782<br>[5] Alexander Tarlinder: “Developer Testing -Building Quality into Software”, Addison-Wesley, 2017, ISBN: 978-0-13-429106-2<br>[6] Andreas Spillner, Tilo Linz, „Software Testing Foundations“, Rocky Nook, 2021, ISBN: 9781681988559. |               |                                |                              |
| <b>Number of active teaching classes: 5</b>   |               | <b>Theoretical teaching: 2</b> | <b>Practical teaching: 3</b> |
| <b>Teaching methods</b><br>Implementation of lectures and exercises using the interactive teaching model (teaching methods: popular lecture, discussion, practical work methods); activated forms of learning: verbal receptive learning, discovery learning, cooperative learning, practical learning.   |               |                                |                              |
| <b>Evaluation of knowledge (maximum number of points 100)</b>   |               |                                |                              |
| <b>Pre-exam obligations</b>   | <b>Points</b> | <b>Final exam</b>              | <b>Points</b>                |
| Activities during teaching process  | 10            | Final exam (written):          | /                            |
| Practical teaching  | /             | Final exam (oral):             | 30                           |
| Colloquium  | 30            |                                |                              |
| Practical teaching  | 30            |                                |                              |