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| 1. | Course Title | Modern robotics trends | | |
| 2. | Code | F18L3S132 | | |
| 3. | Study program | Software engineering and information systems | | |
| 4. | Study Program Organizer | Faculty of Computer Science and Engineering | | |
| 5. | Degree (first, second, third cycle) | first cycle | | |
| 6. | Academic year / semester 4 / summer / mandatory | 7. ECTS credits 6 | | |
| 8. | Teacher | associate professor Nevena Ackovska | | |
| 9. | Course enrollment prerequisites | Автономна роботика или Процесна роботика или (Машинско учење и Основи на роботика) | | |
| 10. | Course program goals (competencies): Students will be familiarized with the contemporary robotics trends. They will gain knowledge of the modern techniques for modelling the environment, in which the robots are common, included in every day activities. The students will be acquainted with the robotics trends, such as human – robot interaction, nanorobotics, biologically inspired robots, robots on the genetics level, robotized manufacturing processes, robotics as assistive technology and other modern trends. | | | |
| 11. | Course program content: Introduction to contemporary robotics trends. Environment for the modern robots. Sensing and actions in the robotics environment. Human – robot interaction. Robotics on nano level. Flexible robotized production processes. Intelligent robotics. Robots as assistive technology. Learning and cognition. Emotional robotics. Collaborating multirobot systems. | | | |
| 12. | Learning methods: Lectures using presentations, interactive lectures, exercises (using equipment and software packages), teamwork, case studies, invited guest lecturers, independent preparation and defense of a project assignment and seminar work. | | | |
| 13. | Total available time | 6 ECTS x 25 hours = 150 hours | | |
| 14. | Distribution of the available time | 30 + 45 + 15 + 15 + 75 = 180 hours | | |
| 15. | Teaching activity forms | 15.1. | Lectures – theoretical teaching | 30 hours |
| | | 15.2. | Exercises (laboratory, auditory), seminar papers, teamwork | 45 hours |
| 16. | Other activity forms | 16.1. | Project Tasks | 15 hours |

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| | | 16.2. | Independent Learning Tasks | 15 hours |
| | | 16.3. | Home learning | 75 hours |
| 17. | Assessment methodology | | | |
| | 17.1. | Tests | | 10 points |
| | 17.2. | Seminar paper/project (presentation: written and oral) | | 30 points |
| | 17.3. | Activity and learning | | 10 points |
| | 17.4. | Final exam | | 50 points |
| 18. | Assessment criteria (points/grade) | | up to 50 points | 5 (five) (F) |
| | | | 51 to 60 points | 6 (six) (E) |
| | | | 61 to 70 points | 7 (seven) (D) |
| | | | 71 to 80 points | 8 (eight) (C) |
| | | | 81 to 90 points | 9 (nine) (B) |
| | | | 91 to 100 points | 10 (ten) (A) |
| 19. | Course completion and final exam requirements | | Realized activities 15.1 and 15.2 | |
| 20. | Teaching Language | | Macedonian and English | |
| 21. | Teaching quality evaluation method | | Internal evaluation mechanisms and questionnaires | |
| 22. | Course Material | | | |
| | 22.1. | Mandatory course material | | |
| | | No | Author | Title |
| | | | Publisher | Year |
| | | 1 | Kevin M. Lynch, Frank C. Park | Modern Robotics: Mechanics, Planning, and Control |
| | | 2 | Angelo Cangelosi and Matthew Schlesinger | Developmental Robotics From Babies to Robots |
| | | 3 | Constantinos Mavroidis Antoine Ferreira | NanoRobotics: Current Approaches and Techniques |
| | | 4 | Diana Coleman | Human-Robot Interactions : Principles, Technologies and Challenges |
| | 22.2. | Additional course material | | |
| | | No. | Author | Title |
| | | | Publisher | Year |
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