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| 1. | Course | Mathematical logics | | | |
| 2. | Code | INF-S8 | | | |
| 3. | Study programme | Informatics | | | |
| 4. | Study programme organized by | Faculty of Computer Science and Engineering | | | |
| 5. | Cycle | Third - PhD | | | |
| 6. | Academic year / semester winter/summer/elective | first/second | 7. | ECTS credits | 7.5 |
| 8. | Teacher | Prof. D-r Marija Mihova, Prof. D-r Smile Markovski | | | |
| 9. | Prerequisites | None | | | |
| 10. | Course programme goals (competences): Studying formal logical methods and their application in computer science. | | | | |
| 11. | Course syllabus: Propositional Logic: syntax and semantics of propositional logic, semantic tableaux, deductive systems (axiomatic proof systems). Resolution, Binary decision diagrams, SAT solvers. First-Order Logic: Formulas, Models, semantic tableaux and deductive systems. Automatic theorem proving using resolution and logic programming. Logic to terms and functions. Temporal Logic: Syntax, semantics, semantic tableaux, and deductive systems. | | | | |
| 12. | Teaching methods: Classes supported with slide presentations, interactive teaching, lab equipment and other software packages, teamwork, case studies, invited guest lecturers, presentations of project works, e-learning materials, forums and consultations | | | | |
| 13. | Total fund of work hours | 7,5 ECTS x 30 h = 225 h | | | |
| 14. | Available hours distribution | 45+30+150 = 225 | | | |
| 15. | Teaching activities | 15.1. | Theoretical classes | 45 h | |
| | | 15.2. | Practical classes (labs, exercises), seminars, team work | 40 h | |
| 16. | Other activities | 16.1. | Project tasks | 30 h | |
| | | 16.2. | Self study | 30 h | |
| | | 16.3. | Homework | 80 h | |
| 17. | Grading | | | | |
| | 17.1. | Tests | | | 50 points |
| | 17.2. | Seminar work/ project (presentation: written and oral) | | | 45points |
| | 17.3. | Active participation | | | 5 points |
| 18. | Grading criteria (points/grade) | to 59 points | | 5 (five) (F) | |
| | | from 60 to 68 points | | 6 (six) (E) | |

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| | | from 69 to 76 points | 7 (seven) (D) |
| | | from 77 to 84 points | 8 (eight) (C) |
| | | from 85 to 92 points | 9 (nine) (B) |
| | | from 93 to 100 points | 10 (ten) (A) |
| 19. | Conditions for attending the final exam | Successful completion of activities 15.1 and 15.2 | |
| 20. | Language | Macedonian or English | |
| 21. | Quality assessment | Internal evaluation and student pools | |

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| 22. | Literature | | | | |
| | Compulsory | | | | |
| | No. | Author | Title | Publisher | Year |
| 22.1. | 1. | M. Ben-Ari | Mathematical logic for computer science, third revised edition | Springer | 2012 |
| | 2. | E. Burke, E.Foxly | Logic and its applications | Prentice-Hall | 1996 |
| | Additional | | | | |
| | No. | Author | Title | Publisher | Year |
| 22.2. | 1. | Joseph R. Shoenfield | Mathematical logic | Addison-Wesley | 1967 |
| | 2. | Chung-wan Lu, Zhongwan Lu | Mathematical logic for computer science | World Scientific | 1989 |