

Master Curriculum in Fundamental Computer Science and Information Technology



MAJOR: Technologies for Computer Game Development

Degree Structure

| # | Activity Type | ECTS cr |
|--------------|---|------------|
| 1. | General studies | 25 |
| | Basic studies | 14 |
| | Elective studies | 11 |
| 2. | Professional studies | 26 |
| | Basic studies | 13 |
| | Elective studies | 13 |
| 3. | Practice and Scientific Research | 54 |
| 4. | Final Certification | 15 |
| Total | | 120 |

Courses

| # | Course Name | Period (semester) | ECTS cr |
|---|---|-------------------|---------|
| General Basic Studies (14 ECTS cr) | | | |
| 1. | Modern philosophy and methodology of science | 1 | 2 |
| 2. | English language | 1, 2 | 4 |
| 3. | Mathematical foundation of information security | 1 | 3 |
| 4. | Algorithmic foundation of multimedia technologies | 3 | 2 |
| 5. | Java programming | 1 | 3 |
| General Elective Studies (total 11 ECTS cr) | | | |
| 6. | Mobile programming | 3 | 4 |
| 7. | Higher education pedagogy | 2 | 2 |
| 8. | Integration of academic science and education | 2 | 2 |
| 9. | Markup languages | 1 | 3 |
| 10. | XML technologies | 1 | 3 |
| 11. | Advanced methods of software development | 2 | 2 |
| 12. | Advanced methods of software engineering | 2 | 2 |
| Professional Basic Studies (26 ECTS cr) | | | |
| 13. | Information technology analysis | 3 | 2 |
| 14. | Object-oriented CASE technologies | 1 | 2 |
| 15. | Object databases | 3 | 2 |
| 16. | Distributed object technologies | 2 | 3 |
| 17. | Distributed and parallel programming | 2, 3 | 4 |
| Professional Elective Studies (total 13 ECTS cr) | | | |
| 18. | Seminar on advanced technologies for computer games development | 2, 3 | 4 |
| 19. | Artificial intelligence for games | 1 | 2 |
| 20. | Computer animation and simulation | 2 | 2 |
| 21. | Game platform development | 3 | 3 |
| 22. | Platforms for game application development | 3 | 3 |
| 23. | Social network game development | 2 | 2 |
| 24. | Network games | 2 | 2 |
| Practice and Scientific Research (54 ECTS cr) | | | |
| 25. | Research practice | 4 | 18 |
| 26. | Scientific and industrial practice | 2 | 6 |
| 27. | Teaching practice | 3 | 3 |
| 28. | Research project | 1, 2, 3 | 27 |
| Final Certification (15 ECTS cr) | | | |
| 29. | State examination | 4 | 1,5 |
| 30. | Master's thesis and seminar | 4 | 13,5 |