



Master of Software Engineering

**Faculty of Engineering in Foreign
Languages**

University POLITEHNICA of Bucharest



Master of Software Engineering

- The goal of the MSE Program is to develop future leaders of industrial software engineering practice: software project leaders, system and software analysts, software architects and designers, R&D specialists.
- Project and research oriented.
- The master is taught entirely in English



MSE - Past

- Founded by prof. Luca Dan Serbanati as the first master of software engineering at UPB, currently managed by prof. Nicolae Goga
- Double diploma with University of Grenoble, France



Curriculum

1. Advanced Concepts in Software Engineering
2. Programming Paradigms
3. Game and Interactive Simulation Systems
4. Formal Models in Software Engineering
5. Model Driven Software Engineering
6. Distributed Software Engineering
7. Software Methodologies
8. Computing in the Semantic Web
9. Advanced Topics in Computer Networks
10. Software Architectures
11. Software Project Management
12. Agent-Oriented Software Engineering
13. Special Topics in Software Engineering



Research

- Heavy emphasis on individual research - 10 ECTS each semester
- Usually, each research deliverable is part of the final dissertation
- Follow phases of a research project : research question, state-of-art, implementation, validation
- Publication-oriented, students are encouraged to publish their results



Example diploma titles 2021

- Integrated Smart Sensors in Smart Trucks
- Intelligent System for Assisting Blind People
- Fast and Adaptive Machine Learning Algorithm for Twitter Data Analysis using Spark
- Parkinson's Disease Tester
- Functional Model for Web-Friendly RPA
- Data Lake Solution for Analyzing COVID-19 Evolution
- Indoor Positioning System used in Frailty Detection
- Business Process Analysis



Alumni

- Iuliana Marin
 - Phd Digitalization in Healthcare and Quality of Living, with Summa Cum Laude
 - Research project director: Eurostars "Intelligent bracelet for blood pressure monitoring and detection of preeclampsia"; SMARTCARE "Integrative platform for home care assistance solutions"; Eureka cINnAMON "A non-intrusive home surveillance system for assisting elderly persons with frailty risk")
 - Excellence Prizes : PRO INVENT 2019, UGAL INVENT 2019, ANIS (for innovative teaching)



Alumni

- Bianca Tesila
 - Google Anita Borg Scholar
 - Innovation Labs - Special Jury Prize
 - Currently Engineering Manager at Adobe



Innovation - directions

- Smart healthcare
- Blockchain
- Semantic computing
- Internet of Medical Things
- ...and others



Innovation - projects

- EUROSTARS-EUREKA iRoute Integrated Analytical Software Platform for Planning, Optimizing and Monitoring Logistics Vehicle Fleets
- EUROSTARS-EUREKA cINnAMON A Non-Intrusive Home Surveillance System for Assisting Elderly Persons with Frailty Risk
- EUROSTARS-EUREKA iBracelet– Intelligent bracelet for blood pressure monitoring and detection of preeclampsia



Innovation - projects

- EUROSTARS-EUREKA iLight – novel energy efficient luminaire equipped with an embedded sensing, indoor localisation and communications electronic system that enables a pervasive, seamless, and inexpensive home monitoring scheme
- EUROSTARS-EUREKA PrEmISES – Multi-agent based middleware Providing Semantically-Enabled Information for SmES knowledge workers
- PNII AIMMS – Application for Using Image Data Mining and 3D Modelling in Dental Screening



Innovation - collaborations

- Smart Pandemic Management (University of Berkley)
<http://spm.berkeley.edu/>
- HL7 Romania
- IEEE Blockchain Romania
- University of Groningen, Netherlands
- Local business ecosystem (Oracle, Infoworld, Maguay, Phoenix...)