

Approved!  
Rector:

/Prof. M. Mitkova/



## QUALIFICATION CHARACTERISTICS

Area of Higher Education: **5. TECHNICAL SCIENCES**

Professional Field: **5.3. COMMUNICATION AND COMPUTER TECHNICS**

Level 6, Sublevel B  
According to The National Qualifications Framework

Specialty: Artificial Intelligence and Virtual Reality

Educational Qualification  
Degree: **MASTER OF SCIENCE**

Form of Education: **PART-TIME**

**Burgas, 2020**



## **ANNOTATION**

The current qualification characteristic of a computer engineer with the educational qualification degree "Master Engineer" (MSc) in the specialty "Artificial Intelligence and Virtual Reality" determines the professional purpose and qualification requirements for the training as well as the areas of professional realization, suggesting a specialization in the field of "Artificial Intelligence and Virtual Reality". In this way, he/she can be prepared to work in all areas where intelligent decision-making processes take place through the means of artificial intelligence and virtual reality.

## **DESIGNATION OF THE SPECIALIST**

Professional purpose of the education program: the training of MSc in "Artificial Intelligence and Virtual Reality" is designed to prepare staff with very good general technical and research knowledge in IT - technology, to know the theoretical foundations of artificial intelligence, modeling and design of databases, to apply technologies for knowledge extraction, machine self-learning, image processing and image recognition, embedded and autonomous systems, neural networks and genetic algorithms, programming, robotics, working with specialized software for 3D modeling, 3D printing and 3D digitization .

The computer engineer in the specialty is prepared to organize, manage and perform research, programming, production research and other activities in the field of artificial intelligence and virtual reality. The MSc will be able to:

- organize and carry out scientific research, forecasting and planning;
- create and use technical and software tools for biometric systems;
- implement software for data analysis and knowledge extraction from data;
- create software for semantic web and semantic network services;
- work with intelligent search engines and intelligent user interfaces;
- work both on the creation and in the operation of expert systems, recommending systems, intelligent learning environments and other types of software systems based on knowledge;
- work with smart databases;
- apply various means for image processing and image recognition;
- design and implement different types of intelligent embedded systems: intelligent robots, "smart home" systems and many more. etc.

## **REQUIREMENTS FOR THE EDUCATION OF THE SPECIALIST**

In the education process for acquiring the educational-qualification degree "Master in Science" in the specialty "Artificial Intelligence and Virtual Reality" profiled and in-depth training is carried out in accordance with the requirements of the educational-qualification degree.

The training provides deepening of the knowledge in the basics of the applied science activity; development of abilities for adaptation in the conditions of social economic and technological changes.

The specialist in "Computer Systems and Technologies" acquires the educational degree "Master of Science" for a period of study of 2 academic years. The education is carried out in 16 disciplines - compulsory and elective and 1 specialized practice.

Compulsory subjects provide profiling professional training. Elective courses provide an opportunity to specialize in the desired field. The education ends with a master thesis in the 3rd semester.



## **KNOWLEDGE**

The Master of Science in "Artificial Intelligence and Virtual Reality" must have a very good profile of general theoretical and technical training and be familiar with the processes in the field of intelligent systems and virtual reality. The Master Engineer must:

- know in detail the hardware and the architectures of the biometric systems;
- know in detail the system and applied software of the systems with intelligent behavior;
- apply the methods and means for knowledge acquisition and image recognition;
- know the theory of artificial intelligence and virtual reality;
- know the theory of expert systems;
- know the theory of embedded systems.

## **SKILLS**

The Master of Science in "Artificial Intelligence and Virtual Reality" shows initiative, independence and responsibility in solving the tasks. He/She is able to:

- formulate and solve complex problems and find an optimal solution, applying his/her specialized knowledge;
- work in a team with representatives of the same and other specialties, as well as lead teams;
- prepare working and technical documentation, to make presentations, to present and defend to different audiences his/her views on certain technical problems and his/her solutions, using modern technical and software tools in the fields of artificial intelligence and virtual reality;
- independently plan and implement the improvement of his/her professional qualification, as well as that of his/her associates, in accordance with the principle of lifelong learning.

## **AREAS OF REALIZATION**

Graduates of the educational qualification degree "Master of Science" in the specialty "Artificial Intelligence and Virtual Reality" are prepared to be successfully realized in the IT field, in the operation of intelligent behaviour systems, in the realization of software products with virtual reality. They can apply the acquired knowledge and skills in the development of scientific and educational organizations, in leading companies in the field of software technology, in the development of intelligent behavior systems, knowledge extraction software, expert systems, intelligent embedded systems, biometric systems and more. The graduates will have the necessary knowledge to implement projects in the field of artificial intelligence and virtual reality in the development of desktop, web-based and mobile applications. Graduates can continue their education in the educational qualification degree "PhD" at "Prof. Dr. Assen Zlatarov" the University - Burgas.

Accepted at FC of FTS with Protocol №

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