

## Computer Science\*

A holder of Master's degree in Computer Science is able to carry out analytical applied research and to use their results in the development and extension of software systems, able to apply new theories of computer science, systems modelling, design methods and technologies, to manage projects in software extension and development field, compete in European and other countries' labour markets. A holder of Master's degree in Computer Science has theoretical and practical skills of system analysis and synthesis; moreover, he/she understands modern computers and their nets' architecture, is able to operate the latest programming technologies, means of data modelling, data output and analysis. Furthermore, he/she is capable of designing multimedia and network systems, ensuring their safety. The acquired qualification enables to install complex systems, manage the projects, provides a possibility for scientific as well as for the highly qualified career. The acquired Master's qualification of Computer Science gives a possibility to work in establishments of scientific research, institutions of higher education, information technologies' departments of firms, banks and companies, Lithuanian and foreign firms of information technologies.

**Degree awarded:** Master's Degree of Informatics

**Study duration:** 2 years full-time

**Knowledge and competences provided:**

### SUBJECT KNOWLEDGE:

- New theories and methods of computer science, research analysis and reliability methods and their applications;
- Modern system analysis and synthesis methods;
- Network system design methods;
- Modern modelling, data mining and management technologies; architecture of modern computers and their networks.

### COGNITIVE COMPETENCES:

- To perform analytical applied research autonomously;
- To evaluate new theories in computer science field.

### PRACTICAL COMPETENCES:

- To apply system modelling and design methods and technologies;
- To design and install modern software systems;
- To head software development teams and IT departments of institutions in private and public sectors;
- To model control processes in a specific domain and implement their models using modern information technologies;
- To model, design and operate database, information and network business systems while ensuring their security;
- To apply new data mining, data protection and data management methods and technologies;
- To install modern computers and their parallel computing networks;
- To design and implement parallel algorithms, create modern cryptosystems, and optimize servicing networks.

**TRANSFERABLE COMPETENCES:**

- To organize his/her work autonomously and responsibly;
- to express ones thoughts smoothly, sequentially and clearly after critical evaluation of ones preparation;
- to think logically, critically and constructively;
- to be tolerant, to keep his/her temper and learn how to learn continuously;
- The ability to communicate in written form and orally in cross-cultural environment, and in groups of specialists and non-specialists.

Semester	Code	Course Title	Credits	No. of Academic Hours
M 1	P170M154	Modern Computer Architecture	6	64
	P170M154	Modern Computer Architecture	6	64
	P175M155	Technologies of Object - Oriented Design	6	64
	P175M452	Data Mining	6	64
	S274M972	Methodology of Scientific Research	6	64
	P175M145	Research Work 1	6	0
M 2	P170M101	Control Processes Modelling	6	64
	P170M153	Distributed Software Design	6	64
	P170M408	Modern Algorithms in Cryptography	6	64
	P175M146	Research Work 2	6	0
		<i>Alternatives 1</i>		
	<i>P175M010</i>	<i>Stochastic Programming</i>	6	64
	<i>P175M460</i>	<i>Mathematical Network Models</i>	6	64
	<i>P176M001</i>	<i>Computer Modelling of Transfer Phenomena</i>	6	64
M 3	P170M138	Statistical Modelling and Analysis	6	64
	P170M152	Data Management Technologies	6	64
	P175M454	Concurrent Programming	6	64
	P175M147	Research Work 3	6	0
		<i>Alternatives 2</i>		
	<i>P170M151</i>	<i>Internet Applications Design</i>	6	64
	<i>P175M100</i>	<i>Investigation and Applications of Heuristic Algorithms</i>	6	64
M 4	P175M144	Final Master's Degree Work	30	0

\* The content of the study programme may change.