**Plan of course description (annotation)**

**Name of the course**

Advances in Computer Technology

**Department responsible for the course or equivalent**

Institute of Computer Technologies and Information Security

Department of information and analytical security systems

**Lecturer (name, academic title, e-mail)**

Alexey Tselykh, PhD, Associate Professor, [tselykh@sfedu.ru](mailto:tselykh@sfedu.ru)

**Semester when the course unit is delivered**

1

**Teaching hours per week**

4

**Level of course unit (for ex., Second cycle – Master level)**

Master level

**ECTS credits**

5

**Admission requirements:**

Language test held by the Department of Foreign Languages

**Course objectives (aims)**

The course is aimed at:

– presenting a survey of emerging trends in computer science and IT;

– developing the skills of conscious choice of research area in the field of computer science;

– promoting interdisciplinary research and collaboration.

**Course contents**

1. The main stages, trends and risks of computer technology development

2. Problems and trends in the development of software and computing

3. Prospects for the development of data mining and knowledge management tools integrated from different subject areas

4. Problems of computer simulation of complex systems

5. Development of information technology design, automated and automated systems

6. Directions of development of high-tech products life cycle support systems

**Learning outcomes**

*Knowledge:* methods and technology for scientific communication; the main trends in the development of intelligent technologies; modern software and hardware for information and automated systems; the main technologies and features of the use of software and hardware in information and automated systems for solving professional problems.

*Skills*: use software and hardware in information and automated systems for solving professional problems; use knowledge of the types, purpose and architecture of hardware and platforms.

*Abilities*: use methods of data mining in the development of algorithms and software for solving professional problems under the conditions of information uncertainty.