

DESCRIPTION OF STUDY MODULE*

Study programme Applied Informatics and Programming

Study module IS DESIGN AND CASE TECHNOLOGIES **Credits in total** 5

Learning outcomes

- Ability to use the fundamental concepts of systematic analysis, its principles, the enterprise modelling methodologies, methods, techniques and standards.
- Using the skills of systematic thinking for information systems analysis, division into the smaller units and coupling to the larger ones and implementation with the chosen information technologies, forming the performance models of organizations using different methods (structural-functional, object-oriented) and notations (DFD, DSD).
- Execution of the design process of information systems by using CASE technologies of performance modelling.
- Practical skills of using software and CASE tools for obtaining and processing of data and information needed to address the problem.
- Ability to use specification of information needs of consumers by preparing a company for installation of applied information systems.

Aims of study module

The **aim** of the course – to provide the knowledge and skills of information systems design methods, basics of enterprise modelling and specification of information needs that are required for the development of computerized systems.

Annotation of a study module

The purpose of the subject is to introduce the performance models of organizations, used in the design of information systems, as well as the performance modelling methods, principles and standards. The subject helps the students assimilate the following: performance modelling technology, basics of business management and specification of information needs by using computerized software CASE measures. The students will learn to form, analyze, model, specify, check, comment and evaluate the formed models of information systems by creating informational infrastructures and computerized systems that help the organizations achieve their own goals of performance improvement.

Topics of the subject

1. Introduction to the Course.
2. Lifetime cycle of information systems.
3. Analysis of the organizational system activity.
4. Analysis of activity using the structural-functional method.
5. Analysis of activity using the object-oriented method: Business Interaction Model.
6. Analysis of activity using the object-oriented method: Work Flow Model.
7. Analysis of activity using the object-oriented method: other models.
8. Analysis and specification of the use's information needs.
9. Modelling of a business system.
10. Object-oriented design – UML language: the model of use cases in the stages of performance modelling and requirements specification.
11. Information systems modelling.
12. Model of activity objects.
13. Design of a database: modelling of entity-relation.
14. Description of the process logics.
15. Conceptual map.

Procedure for assessment of knowledge and competences

Knowledge and abilities are evaluated on the basis of a criteria-based ten-point scoring system and accumulative assessment: average assessment of laboratory works (20%), practical work (20%), self-work (10%) and assessment of the examination (50%). $G = LD*0.2+PD*0.2+SD*0.1+E*0.5$.

Main literature

1. GUDAS, Saulius (2008). *Organizacijų veiklos modeliavimo praktiniai darbai / Practical Works on Activity Modelling of Organizations*. Klaipėda: Publishing House of Klaipėda University, 201 p. ISBN 978-9955-18-348-8.
2. GUDAS, Saulius; and LOPATA, Audrius (2011). *Žiniomis grindžiama sistemų inžinerija / Knowledge Based System Engineering*. Vilnius: TEV, 230 p. ISBN 978-609-433-060-5.
3. KENDALL, Kenneth E.; and KENDALL, Julie E. (2011). *Systems Analysis and Design*. New York: Pearson, 8th edition,

* Short form

572 p. ISBN 978-0-13-608916-2.

4. NEMURAITĖ, Lina (2008). *Informacinių sistemų programinės įrangos projektavimas / Design of Information System Software Tools*. Klaipėda: Publishing House of Klaipėda University, 381 p. ISBN 978-9955-18-347-1.
5. SEKLIUCKIS, Vitolis; GUDAS, Saulius; and GARŠVA, Gintautas (2008). *Informacijos sistemos ir duomenų bazės / Information Systems and Databases*. Kaunas: „Technologija“, 350 p. ISBN 9955-25-039-9.
6. SAULIS, Algis; and VASILECAS, Olegas (2008). *Informacinių sistemų projektavimo metodai / Methods of Designing of Information Systems*. Vilnius: „Technika“, 247 p. ISBN 978-9955-283-45-4.
7. TEKUTOV, Jurij (2015–). *Informacinių sistemų projektavimas ir CASE technologijos / IS Design and CASE technologies: E-Methodical Material, Distance Course, P175I076* [interactive]. Klaipėda: Lithuania Business University of Applied Science [accessed on 11 September 2015]. Access on the Internet: <<http://www.ltvk.lt/moodle>>.