

Fundamentals of business analysis

COURSE SYLLABUS

Code and name of specialty	122 Computer Science	Institute / faculty	Faculty of Computer Science and Software Engineering
Program name	“Computer Science and Intelligent Systems”	Department	Software Engineering and Management Information Technologies
Type of program	Educational and Professional	Language of instruction	Ukrainian/English

LECTURER

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Doctor of Technical Sciences, Associate Professor, Professor of SEMIT Department. Number of scientific and educational publications is more than 90. (<https://publons.com/researcher/1588564/valentyna-moskalenko/>; Web of Science Researcher ID R-9960-2018; <https://scholar.google.com.ua/citations?user=eUidJHIAAAAJ&hl=ru>; <https://www.scopus.com/authid/detail.uri?authorId=36021571200>; <https://orcid.org/0000-0002-9994-5404>).

Courses taught: "Probability Theory and Mathematical Statistics", "Fundamentals of Computer Science and Artificial Intelligence Methods", "Fundamentals of Information Systems and Technologies", "Software Requirements Engineering", "Fundamentals of Business Analysis", "Computational Intelligence Methods", "Methods of computational intelligence and intellectual analysis", "Machine learning", "Business systems analytics"

GENERAL DESCRIPTION OF THE COURSE

Summary	<p>The course “Fundamentals of business analysis” is a discipline in the cycle of special mandatory training in the specialty 122 "Computer Sciences". It is taught in the fourth semester in the amount of 90 hours (3 ECTS credits), in particular: lectures - 32 hours, workshops - 16 hours, independent work – 42 hours. The course provides two content modules and two module tests. The discipline ends with a test.</p> <p>The subject of study of the academic discipline is the main aspects of the work of a business analyst in the IT field, including: planning and monitoring business analysis, survey and cooperation with project stakeholders, strategy analysis, requirements analysis and design definition, assessing the business value of the project and analysis of the effectiveness of a business solution, business analysis methods and business analysis practices in related areas: Agile, Business Intelligence, information technology, business architecture and business process management.</p>						
Course objectives	The purpose of studying the discipline is to form theoretical knowledge and practical skills in the basics of business analysis in the IT industry among specialists in computer science and intelligent systems.						
Types of classes and control	Lectures, laboratory classes. Continuous assessment – laboratory works, intermediate modular assessment. Final assessment – the test.						
Term	4						
Student workload (credits) / Type of course	3/ Mandatory	Lectures (hours)	32	Workshops (hours)	16	Self-study (hours)	42
Program competences	<p>GC1. Ability to abstract thinking, analysis and synthesis.</p> <p>GC2. Ability to apply knowledge in practical situations.</p> <p>GC3. Knowledge and understanding of the subject area and understanding of professional activity.</p>						

GC6. Ability to learn and master modern knowledge.
 GC7. Ability to search, process and analyze information from various sources
 GC10. The ability to be critical and self-critical.
 PC 6. Ability to think systematically, apply the systems analysis methodology to study complex problems of different nature, methods of formalization and solution of system problems with conflicting goals, uncertainties, and risks.
 PC 15. Ability to analyze and perform functional modelling of business processes, construction and practical application of functional models of organizational, economic, and production-technical systems, methods of risk assessment of their design.
 PC 19. Ability to comprehensively use for the creation of intelligent management systems methods of mathematical modelling and analysis of complex systems, methods of modelling and analysis of business processes, information technologies for the management of business systems..

Learning outcomes	Teaching and learning methods	Forms of assessment (continuous assessment CAS, final assessment FAS)
<p>PLO 8. Use the methodology of system analysis of objects, processes, and systems for the tasks of analysis, prediction, management, and design of dynamic processes in macroeconomic, technical, technological, and financial objects.</p> <p>PLO 14. Apply knowledge of methodology and CASE tools for designing complex systems, methods of structural analysis of systems, object-oriented design methodology in the development and study of functional models of organizational-economic and production-technical systems.</p> <p>PLO 19. Create intelligent management systems using methods of mathematical modelling and analysis of complex systems, methods of modelling and analysis of business processes, information technologies for the management of business systems.</p>	<p>Interactive lectures with presentations, discussions, laboratory classes, teamwork, case method, student feedback method, problem-based learning</p>	<p>Written individual assignments for laboratory works (CAS), assessment of knowledge in laboratory classes (CAS), express surveys (CAS), online tests (CAS), final/semester control in the form of a semester test, according to the schedule of the educational process (FAS)</p>

ASSESSMENT AND GRADING

Ranges of points corresponding to grades	Total score (points) for all types of learning activities	ECTS grading scale	The national grading scale	Allocation of grade points	
	90-100	A	excellent		<p>100% Final assessment as a result of Final test (10%) and Continuous assessment (90%). 10% Final test 90% Continuous assessment: Test №1 (15%) Test №2 (15%) Laboratory works (60%) Laboratory work №1 (12%) Laboratory work №2 (12%) Laboratory work №3 (12%) Laboratory work №4 (12%) Laboratory work №5 (12%)</p>
	82-89	B	good		
	74-81	C			
	64-73	D	satisfactory		
	60-63	E			
	35-59	FX	Unsatisfactory (with the exam retake option)		
	0-34	F	Unsatisfactory (with mandatory repetition of the course)		

Course policy Students must attend all classes according to the study schedule and adhere to the norms of academic ethics. To study the course, students need to have their personal computer and (or) use computers of the computer center at the department. Students must work with compulsory and recommended reading, including Internet resources. Students must complete and submit all laboratory works during the semester in which the course is taught, before the examination session. The final assessment is not carried out without the personal presence of students.

COURSE STRUCTURE AND CONTENT

Lecture 1	Key concepts of business analysis according to the Business Analysis Body of Knowledge (BABOK)			Self-study	Areas of activity of a business analyst and their features
Lecture 2	Business Analysis Planning and Monitoring				Types of organizational structures of enterprises, effective organizational structures of IT companies
Lecture 3	Business Analysis Planning and Monitoring				Planning as a management function
Lecture 4	Survey and collaboration	Laboratory work 1	Communication techniques with key project stakeholders (questionnaires, interviews, etc.). (Innovation Campus: PO39 - Business Analysis - Sprint01)		Brainstorming and Other Idea Generation Techniques
Lecture 5	Business Analysis Techniques to Conduct Survey and Support Collaboration				
Lecture 6	Requirements lifecycle management	Laboratory work 2	Development of a specification of business requirements for software (Innovation Campus: PO39 - Business Analysis - Sprint01)		
Lecture 7	Analysis of the strategy. Strategic analysis methods				
Lecture 8	Requirement's analysis and design definition	Laboratory work 3	Development of software requirements specification (Software Requirements Specification) (Innovation Campus: Software18 Web Fullstack - chronos)		
Lecture 9	Methods for identifying software requirements and defining design				
Lecture 10	Assessment of the value, limitations of the software solution and analysis of performance indicators	Laboratory work 4	Development of a business model of the CANVAS IT project (Innovation Campus: PO40 - Business Analysis - Sprint02)		Features of the development of different types of business models
Lecture 11	Methods for assessing business value obtained after software implementation and analysis of the effectiveness of a business solution				
Lecture 12	Business Analyst Core Competencies	Laboratory work 5	Development an IDEF0 model for the software development process (InnovationCampus: PO41 - Business Analysis - Sprint03)		SADT Modeling Methodology and IDEF Standards
Lecture 13	Application of business analysis practices in related areas: Agile				
Lecture 14	Applying Business Analysis Practices in Related Areas: Business intelligence				Main trends in the development of Business Intelligence

Lecture 15	Application of business analysis practices in related areas: Information technology, Business architecture			
Lecture 16	Applying Business Analysis Practices in Related Areas - Business Process Management (BPM)			Business process approach to enterprise management

RECOMMENDED READING

Compulsory	<ol style="list-style-type: none"> 1. A Guide to the Business Analysis Body of Knowledge® (BABOK® Guide). International Institute of Business Analysis (2015) Toronto, Ontario, Canada. Version 3.0 published 2. Howard Podeswa (2009) The Business Analyst’s Handbook., Course Technology, a part of Cengage Learning. Publisher and General Manager. 3. Paul Turner, James Cadle (2020) Business Analysis Techniques. 4th ed. Edition- Revised Edition 4. Helen Winter (2019) The Business Analysis Handbook: Techniques and Questions to Deliver Better Business Outcomes. 1st Edition. Kogan Page. 5. The PMI Guide to Business Analysis (Paperback) (2018). Project Management Institute. 6. Biazid, Dahlia (2021) Requirements Development Guidebook. CreateSpace Independent Publish. 7. James Cadle, Debra Paul and Paul Turner (2014) Business Analysis Techniques: 99 Essential Tools For Success 	Додаткова	<ol style="list-style-type: none"> 1. Engineering and Managing Software Requirements.(2005) Editors: Aurum, Aybüke, Wohlin, Claes (Eds.). Springer 2. Howard Podeswa (2010) UML for the IT Business Analyst: A Practical Guide to Object-Oriented Requirements Gathering, 2nd ed. Course Technology/Cengage Learning. 3. Lynda Girvan (2017) Agile and Business Analysis Practical guidance for IT professionals. BCS Learning & Development Limited 4. Russell L. Ackoff. (1978) The Art of Problem Solving. — John Wiley & Sons, http://gtmarket.ru/library/basis/7078). 5. Leffingwell D., Widrig D. (2001). Managing software requirements: a unified approach. Addison-Wesley Longman Publishing Co., Inc. Boston, MA, USA © 6. Business Analysis Fundamentals Retrieved from: // https://projectmanagementacademy.net/business-analysis-fundamentals 7.
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ACADEMIC INTEGRITY

Students are expected to adhere to the Code of Ethics of Academic Relations and Integrity of NTU “KhPI”.

The content of this syllabus is consistent with the course program.