

Short Name of the University/Country code Date (Month / Year)	DSEA/ P11 Jan 2020
TITLE OF THE MODULE	Code
Cross-platform programming and information security, protection of medical information	P11

Teacher(s)	Department
Coordinating: Svitlana Malyhina, PhD Others:	Department of Computer and Information Technology (CIT)

Study cycle (BA/MA)	Level of the module (Semester number)	Type of the module (compulsary/elective)
Bachelor	8- th semester for Bachelor	compulsory

Form of delivery	Duration	Langage(s)
Lectures, laboratory work	18 weeks	Ukrainian / English

Prerequisites	
Prerequisites: - Theory of algorithms and graphs - System programming and operating systems "; - "Computer Networks"; - "Circuitry"; - "Computers and microprocessor systems"; - "Methods and tools of CIT "	Co-requisites (if necessary):

ECTS (Credits of the module)	Total student workload hours	Contact hours	Individual work hours
3,0	90	72	18
Aim of the module (course unit): competences foreseen by the study program			
The student must be able to: - creation and use of in-process COM-server, monitor the creation of COM-server and COM-client, OLE technology, the ability to create controllers for automation of Microsoft Office applications - capabilities of network systems, their characteristics, classification, configuration, features of interaction and integration, as well as be able to apply them in real conditions; - create encrypted communication channels to prevent interception of information.			
Learning outcomes of module (course unit)		Teaching/learning methods	Assessment methods
knowledge: - acquaintance with the principles, use of in-process COM-server, monitor the creation of COM-server and COM-client, OLE technology, the possibility of creating controllers for automation of Microsoft Office applications; - have a thorough training in programming, know the capabilities of network systems, their characteristics, classification, configuration, features of interaction and integration, as well as be able to apply them in real conditions for software implementation taking into account the requirements for its quality, reliability, performance; - Professionally own a computer and information technology.		Lectures	Knowledge test
skills: - programmatically implement algorithms for solving problems, develop systems and application software for information systems and technologies; - use programming languages, information resource description languages, specification languages, as well as tools for designing and creating information technology systems, products and services; - independently search, systematize, generalize educational material, develop options for solving problems and choose the most rational ones.		Lectures, laboratory work, consultation	Attending lectures, performing individual work and presentations
Competencies: - readiness to draw up, present, report and defend the results of the work performed; - the ability to understand the main problems in their subject area, to choose methods and means of solving them		Lectures, labs, consultations	Reports and presentations

Themes	Contact work hours							Time and tasks for individual work	
	Lectures	Consultations	Seminars	Practical work	Laboratory work	Placements	Total contact work	Individual work	Tasks
Content module1. Cross-platform programming.	2				2		4	1	Lab work protection
1. Fundamentals of COM technology. The concept of the interface. LUnknown interface. Announcement and implementation of interfaces. COM servers and their appearanceinternal cycle									
2 The concept of factory classes and the use of the registry. The concept of type library.	2				2		4	1	Lab work protection
3 OLE AUTOMATION technology IDispatch interface	2				2		4	1	Lab work protection
24. Variant data type and its use									
4. The concept of dispin interface. Marshaling and client-server interaction	2				2		4	1	Lab work protection
5.Creating application automation controllers MICROSOFT OFFICE. Microsoft Word automation. Presentation of medical and biological data using word processors.	4				4		8	2	Lab work protection
6. Creating application automation controllers MICROSOFT OFFICE. Microsoft Excel automation.	4				4		8	2	Protection laboratory work
Content module 2. Technologies of information protection, protection of medical information.	2				2		4	1	Lab work protection
1. Information security. classification of threats Transfer of medical information. Network technologies.									
2. Means of recognition and delimitation of access to information	2				2		4	1	Lab work protection
3. Protection of software products. Coding and classification of medical and biological data	2				2		4	1	Lab work protection
4. Classification of security threats to distributed computing systems. Classification of computer viruses. The main differences between computer viruses and live	2				2		4	1	Lab work protection
5. Levels of the OSI reference model.	4				4		8	2	Lab work protection
6. Cryptography. Encryption of medical information when stored on a PC. Encryption of information when transmitted over a local network. Encryption of medical information when transmitted on the global network.	4				4		8	2	Lab work protection
7. Models of mechanisms for implementing typical security threats to distributed computer systems. Medical data security. Protect your computer when connected to a network using a firewall	4				4		8	2	Lab work protection
Total	36				36		72	18	

Assessment strategy	Weight in %	Deadlines	Assessment criteria
Computer testing, written answers to theory questions	40%	during the semester	Good response to the questions
Lab work protection	60%	during the semester	The work is done completely without mistakes or minor errors

Author	Year of issue	Title	No of periodical or volume	Place of printing. Printing house or internet link
Compulsory literature				
Mueller, John	2002	COM + technology		SPb .: Peter
Tanenbaum, Andrew S.	2003	Distributed systems. Principles and paradigms		SPb .: Peter
Smith, Roderick, W.	2003	Linux Network Tools		with English - Moscow: Williams Publishing House
Additional literature				
Bruy V.V.	2003	LINUX server: step-by-step installation and configuration instructions		M .: Izd. SIP RIA ISBN 5-89354-153-7