

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject (-)		Code 1010841161010843668
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 3 / 6
Elective path/specialty Multimedia and Consumer Electronics	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 1 Classes: - Laboratory: 2 Project/seminars: -		No. of credits 3
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) from field
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 3 100% 3 100%
Responsible for subject / lecturer: dr inż. Sławomir Maćkowiak email: smack@put.poznan.pl tel. +48 0616653890 Wydział Elektroniki i Telekomunikacji ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	1 Has knowledge of programming in C / C + +. 2 Has basic knowledge in the field of image processing.
2	Skills	1 Can obtain information from literature and databases and other sources in Polish or English. 2 He can use high-level programming languages ??C / C + +.
3	Social competencies	K_K02 Capable of self-learning (books, computer programs)He acts actively in class, asks questions, knowingly uses the contact with the teacher (eg consultation).
Assumptions and objectives of the course: Course meets the latest trends in application development for multimedia applications, the use of new media technologies in telecommunication systems. Various programming languages ??allow you to use different styles of programming, also known as the paradigm of programming and the specific features of the language. The choice of tools, programming libraries may depend on your personal taste, a software company policy or because of the mission that the final application is to execute. The best option is to choose the programming language best suited to the problem to be solved and any existing infrastructure. The course material covers issues related to construction and project management in the field of computer science and software engineering. Within the framework of these issues are studied in the software life cycle models, the activities carried out in different phases of a development project, the use of CASE tools, proper identification and definition of requirements and a description of the activities related to ensuring the quality of the resulting software. These are the most popular methods of analysis and design software.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. It has a working knowledge of the available tools, libraries, specialized writing software for supporting multimedia applications. - [K1_W11]		
2. He has expertise in software development specialist dedicated to different hardware platforms. - [K1_W11]		
Skills:		
1. Has the ability to use tools, specialized libraries for multimedia applications. - [K1_U14]		
2. He can use the tools to manage software versions. It can test the software, use the debugging tools written software. - [K1_U14]		
3. Has ability to adjust the software code for different hardware platforms and achieve the same effect in different conditions and with different requirements. - [K1_U14]		
Social competencies:		

1. It is open to the possibility of continuous training and understands the need to improve professional competence. - [K1_K01]
 2. He has a sense of responsibility for the quality of the resulting software. - [k1_k03]

Assessment methods of study outcomes

1. A written or oral exams or test questions.
2. Reports from a thematically block of laboratory.
3. Checking preparation for classes and activities in the laboratory.

Course description

Windows Multimedia: Audio & Multimedia, Multimedia Input, Video for Windows. MFC (Microsoft Foundation Classes): Support for multiple formats. Serialization of custom objects. Smart printing. Editing in Print Preview. Adjusting these controls. Modeless property sheets. Custom AppWizard wizards. Own procedures DDX and DDV. Extending MFC using DLLs. ActiveX and Internet programs. Databases, multithreading. Mikroporocesy ARM. Windows Mobile.COM + Component Object Model-core architecture programming COM +. Operation of the basic mechanisms of the COM + under Windows 2000 and Windows architecture Distributed Internet Applications (DNA). Using the Interface Definition Language (IDL) to create type libraries. Create clients and components in C + +. Topics and compartments.C # Overview of C #, the CLR (Common Language Runtime) and BCL (Base Class Library), discussion of the elements of C #, the main C # data types, base types, objects, calculation, delegations, collections, interfaces. Handling exceptions and events. Topics, and the use of regular expressions. Reflections and custom attributes. Cooperation with older components Win32 API and COM.Tools to manage complex programming projects (UML), software version management systems, software reliability. Construction and management of IT project. Using UML in accordance with the principles of object-oriented approach. Version management tools Microsoft Visual SourceSafe and CVS. Organize source code management system. The reliability of software. The use of debuggers.The material covers issues related to construction and project management in the field of computer science and software engineering. Within the framework of these issues are studied in the software life cycle models, the activities carried out in different phases of a development project, the use of CASE tools, proper identification and definition of requirements and a description of the activities related to ensuring the quality of the resulting software. These are the most popular methods of analysis and design software, with particular emphasis on object-oriented methods. Topics covered are illustrated with several examples.

Basic bibliography:

1. Programowanie: COM+ Guy Eddon, Henry Eddon, Wyd. RM (2001)
2. Microsoft Windows - programowanie sieciowe Anthony Jones, Jim Ohlund, (2000)
3. DirectX w przykładach Adam Ślosarski, Wyd. Mikom, (Warszawa 1999)
4. Efektywne programowanie w C++. Dov Bulka, David Mayhew(przekład Jacek Mozdyniewicz), Wyd. Mikom, (Warszawa 2001)
5. OpenGL - księga eksperta Richard S. Wright jr, Michael Sweet Tłumaczenie:Marcin Pancewicz, Wyd. Helion, (11/1999)

Additional bibliography:

1. Teach Yourself DirectX 7 in 24 hours Dunlop, Shepherd, Martin, SAMS, 2000

Result of average student's workload

Activity	Time (working hours)	
1. Lectures and practical classes	45	
2. Preparation for the classes and writing a final report	15	
3. Literature study	15	
4. Preparation for exam	15	
5. consultations with lectures and laboratory project	15	
Student's workload		
Source of workload	hours	ECTS
Total workload	90	3
Contact hours	60	2
Practical activities	30	1