Politechnika Świętokrzyska
WYDZIAŁ ELEKTROTECHNIKI, AUTOMATYKI I INFORMATYKI

COURSE DESCRIPTION

Course code	full-time studies	
	part-time-studies	
Course name	**Programowanie sieciowe**	
Course name in English	**Network programming**	
Valid from academic year	**2022/23**	

PLACEMENT IN THE TEACHING PROGRAM

Field of study	**Computer Science**
Level of education	**1st degree**
Studies profile	**General**
Form and method of teaching classes	**Full-time and part-time studies**
Specialization	**Information and communication technology**
Organizational unit responsible for the course	**Katedra Systemów Informatycznych**
Course coordinator	**dr inż. Mirosław Płaza**
Approved by	**Dean of the Faculty of Electrical Engineering, Automatic Control and Computer Science Roman Deniziak, KUT prof., DSc, PhD**

GENERAL CHARACTERISTIC OF THE COURSE

Course affiliation		**Speciality**
Course status		**Obligatory**
Language		**English**
Semester	full-time studies	**Semester V**
	part-time-studies	**Semester VI**
Requirements		**Computer networks**
Exam (YES/NO)		**NO**
ECTS		**2**

Course form		lecture	classes	laboratory	project	other
Hours per semester	full-time studies	**15**		**15**		
	part-time-studies	**9**		**9**		

LEARNING RESULTS

Category	Result Symbol	Learning Results	References to the field of study results
Knowledge	W01	Students know and understand how to use network programming methods in ICT systems.	INF_W31
	W02	Students know and understand the applications of frameworks used in network programming issues.	INF_W31
	W03	Students know and understand the methods of testing network applications.	INF_W31
Skills	U01	Students are able to design network tools in a scripting programming language.	INF_U31
	U02	Students are able to implement and test network applications in a scripting programming language.	INF_U31
	U03	Students are able to use network frameworks in practice	INF_U31
Social competence	K01	Students are prepared to continuously update their knowledge in the field of network programming	INF_K1 INF_K2
	K02	Students are prepared to use network programming issues for the benefit of society.	INF_K1 INF_K2

COURSE CONTENT

Course Form	Content
lecture	1. **Implementations of network communication elements** (network socket, low-level communication using sockets). 2. **Network name resolution system** (name translation databases, queries and searching DNS servers). 3. **Selected services support** (SSH and interactive services, SSL – support of certificate infrastructure, FTP – operations on data and metadata). 4. **Email communication** (SMTP and POP protocols, MIME – attachments and nesting, securing email communication). 5. **Network frameworks** (scripting languages in applications of popular network frameworks). 6. **Asynchronous network communication** (multithreading and multiprocessing, scalability of network applications, development of distributed applications). 7. **Network application testing** (practical implementation of network application testing in scripting languages). 8. **Load and stress testing** (testing network applications using modern software development methodologies).
laboratory	1. Developing network tools in scripting languages using sockets. 2. Email-related protocols support. 3. Exploration of frameworks used in communication solutions. 4. Testing popular tools and libraries in network applications. 5. Developing distributed applications. 6. REST protocol support in scripting languages. 7. Implementations of web application tests in scripting languages.

LEARNING RESULTS VERIFICATION METHODS

Result Symbol	Learning results verification methods					
	Oral Exam	Written Exam	Midterm	Project	Report	Other
W01			X			
W02			X			
W03			X			
U01			X			
U02			X			
U03			X			
K01			X			
K02			X			

ASSESSMENT FORMS AND CRITERIA

Course Form	Assessment Form	Assessment Criteria
lecture	pass with a grade	Obtaining at least 50% of the points from the pass tests during the laboratory classes.
laboratory	pass with a grade	Obtaining at least 50% of the points from the pass tests during the laboratory classes.

STUDENT'S VOLUME OF WORK

No.	Activity Type	ECTS Balance										Unit
		Student Involvement										Unit
		full-time studies					part-time-studies					
1.	Participation in classes according to the schedule	Lec	C	Lab	P	S	Lec	C	Lab	P	S	h
		15		15			9		9			
2.	Other (consultations, exams)	2		2			2		2			h
3.	**Total with the direct assist of an academic teacher**	**34**					**22**					h
4.	**Number of ECTS, that students obtains with the direct assist of an academic teacher**	**1,36**					**0,88**					ECTS
5.	**Hours of unassisted student work**	**16**					**28**					h
6.	**Number of ECTS that student obtains working unassisted**	**0,64**					**1,12**					ECTS
7.	**Practical classes volume of work**	**15**					**9**					h
8.	**Number of ECTS obtained by student at practical classes**	**0,6**					**0,36**					ECTS
9.	**Total student's volume of work expressed in hours**	**50**					**50**					h
10.	**ECTS**	**2**										