

Subject card

Subject name and code	Cloud Computing, PG_00178067						
Field of study	Informatics and Econometrics						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2028/2029		
Education level	Bachelor's studies	Subject group			Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	5	ECTS credits			7.0		
Learning profile	academic	Assessment form			credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Michał Kuciapski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	60.0	0.0	0.0	75
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	75		4.0		96.0	175
Subject objectives	<p>Learning back-end and front-end programming languages for web applications through cloud computing.</p> <p>Acquiring skills in programming and hosting dynamic sites in the cloud using data storage services.</p> <p>Using server-less services to create scalable applications.</p> <p>Using artificial intelligence in applications thanks to cloud computing services.</p> <p>Using Platform-as-a-Service and Infrastructure-as-a-Service solutions.</p>						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[liEL3_U12] The student can design and implement IT systems to enhance business operations and effectively utilize modern ICT technologies for management and business communication.		Coding in web applications access to databases hosted in the cloud.		[SU2] presentation/project/paper/report		
	[liEL3_U02] Students can select or construct econometrics, informatics or statistics tools and apply them to describe and solve economic and social problems.		It seeks to solve the presented problem using cloud computing applications.		[SU2] presentation/project/paper/report		
	[liEL3_W06] To an advanced degree, the student knows and understands the processes and methods of creating, developing, and providing appropriate conditions for using informatics or statistics tools, particularly those that improve human and organizational functioning.		Understands the principles and specifics of cloud programming. Programs dynamic web applications hosted in the cloud. Uses artificial intelligence to recognize data.		[SW2] presentation/project/paper/report		

Subject contents

Podstawy programowania w chmurze:

Języki programowania w chmurze

Dedykowane interfejsy API do programowania w chmurze

Rozwój witryny w chmurze:

Planowanie wdrożenia witryny

Konfigurowanie podstawowych parametrów witryny

Projektowanie interfejsu użytkownika witryny

Programowanie funkcjonalności witryny

Hostowanie witryny w chmurze

Monitorowanie wdrożenia witryny

Publikowanie aplikacji internetowej

Warstwa zaplecza witryny:

Podejście architektoniczne REST

Programowanie kontrolerów REST

Front-End Layer for a Site:

Front-End Frameworks

Przygotowanie Front-End witryny

Programowanie komunikacji Front-End i Back-End dla witryny

Dostęp do baz danych hostowanych w chmurze:

Tworzenie bazy danych w chmurze

Programowanie połączenia z bazą danych

Programowanie CRUD

Dostęp do danych usługi przechowywania w aplikacji:

	Programming Access to Blobs Reading and Writing Data to Non-Relational Tables Programming File I/O Cloud Programming Basics: Cloud Programming Languages Dedicated Cloud Programming APIs Cloud Site Development: Planning a Site Deployment Configuring Basic Site Parameters Designing a Site User Interface Programming Site Functionality Hosting a Site in the Cloud Monitoring Site Deployment Publishing a Web App Back-End Layer for a Site: REST Architectural Approach Programming REST Controllers Front-End Layer for a Site: Front-End Frameworks Preparing a Site Front-End Programming Front-End and Back-End Communications for a Site Accessing Cloud-Hosted Databases: Creating a Cloud Database Programming a Database Connection CRUD Programming Accessing Storage Service Data in an Application: Programming Access to Blobs Reading and Writing Data to Non-Relational Tables Programming File I/O											
Prerequisites and co-requisites	Non-relational database solutions, Front-end frameworks, Distributed application programming.											
Assessment methods and criteria	<table border="1"> <thead> <tr> <th>Subject passing criteria</th> <th>Passing threshold</th> <th>Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>Number of points for the final project</td> <td>51.0%</td> <td>100.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Number of points for the final project	51.0%	100.0%			
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Recommended reading	<table border="1"> <tbody> <tr> <td>Basic literature</td> <td colspan="2">1. Fryźlewicz Z., Nikończuk D., Windows Azure. Wprowadzenie do programowania w chmurze, Helion 2022</td> </tr> <tr> <td>Supplementary literature</td> <td colspan="2">1. Sunilkumar Manvi Gopal Shyam, Cloud Computing. Concepts and Technologies, Taylor & Francis 2024</td> </tr> <tr> <td>eResources addresses</td> <td colspan="2"></td> </tr> </tbody> </table>			Basic literature	1. Fryźlewicz Z., Nikończuk D., Windows Azure. Wprowadzenie do programowania w chmurze, Helion 2022		Supplementary literature	1. Sunilkumar Manvi Gopal Shyam, Cloud Computing. Concepts and Technologies, Taylor & Francis 2024		eResources addresses		
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Example issues/ example questions/ tasks being completed	1. Develop a business application that uses a broad set of cloud computing services for data storage, processing, and visualization.											
Work placement	Not applicable											

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