

Białystok University of Technology									
Field of study	Computer Science							Degree level and programme type	Engineer's degree full-time programme
Specialization/ diploma path	---							Study profile	academic
Course name	Open Source Frameworks for Rapid Application Development							Course code	FCS-00019
								Course type	obligatory
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	3
	30				30			No. of ECTS credits	6
Entry requirements	Object Oriented Programming (FCS-00012),								
Course objectives	The student after completing the lecture and practice laboratory is able to design and implement an application based on Django framework and application based on Ruby on Rails framework.								
Course content	<p>Lecture: Introduction to web frameworks Ruby on Rails and Django; Fundamentals of Ruby language; Fundamentals of Python language; Construction and operation of applications built using Ruby on Rails and Django; Administration of application; Application security; Additional modules extend the application; Application performance; Deploying applications; Testing the applications</p> <p>Laboratories: Exercises in Python language; Exercises in Ruby language; Implementation (design, implementation, testing, implementation) of a selected web application using Django or Ruby on Rails frameworks.</p>								
Teaching methods	lecture problem, programming,								
Assessment method	lecture - written test, practice laboratory - implementation of application								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
LO1	has the knowledge about the methodology, techniques and programming tools used in frameworks. Know and understand the principles of software development solutions using frameworks and design patterns, in particular MVC pattern. Know techniques of creating web applications based on frameworks.							K_W06 K_W09	
LO2	can design, implement and deploy the web information technology system based on framework. Can select appropriate tools for performing these processes.							K_U06 K_U09	
LO3	presents, on the basis of materials prepared by themselves as well as acquired from different sources, using the newest information and communication techniques effects of their own work.							K_U14	
LO4	can work in group, assuming different roles.							K_K03	
Symbol of learning outcome	Methods of assessing the learning outcomes							Type of tuition during which the outcome is assessed	
LO1	written exam							L	
LO2	project and implementation of application, observation of classwork							Sw	
LO3	evaluation of the presentation of application							Sw	
LO4	project and implementation of application, observation of classwork							Sw	
Student workload (in hours)							No. of hours		
Calculation	1 - Attendance at lectures -							30	
	2 - Attendance at laboratories -							30	
	3 - Participation in student-teacher sessions -							5	
	4 - Preparation and design of projects -							65	
	5 - Preparation for the exam -							20	
<b>TOTAL:</b>							<b>150</b>		
Quantitative indicators							HOURS	No. of ECTS credits	
Student workload - activities that require direct teacher participation							65 (1)+(2)+(3)	2.6	
Student workload - practical activities							95 (2)+(4)	3.8	
Basic references	<ol style="list-style-type: none"> <li>Peter Norton: Beginning Python, Wrox, 2005.</li> <li>Django Software Foundation, Django documentation, online: <a href="https://docs.djangoproject.com">https://docs.djangoproject.com</a></li> <li>Dave Thomas: Agile Web Development with Rails, Pragmatic Bookshelf, 2006.</li> <li>David Flanagan, Yukihiro Matsumoto: The Ruby Programming Language, O'Reilly Media, 2008.</li> <li>Peter Cooper: Beginning Ruby: From Novice to Professional, Apress, 2007.</li> <li>Ruby on Rails Guides, online: <a href="http://guides.rubyonrails.org">http://guides.rubyonrails.org</a></li> </ol>								
Supplementary references	<ol style="list-style-type: none"> <li>Marty Alchin: Pro Django, Apress, 2009</li> <li>Roger S. Pressman, David Lowe: Web engineering : a practitioner's approach, Boston, McGraw-Hill, 2009.</li> </ol>								
Organisational unit conducting the course	Software Department							Date of issuing the programme	
Author of the programme	dr inż. Tomasz Łukaszuk							Feb. 18, 2022	

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW – field work, S – seminar