

<b>Network Infrastructure and Services Automation</b>					
<b>Course code</b> CIF62025	<b>student workload</b> 90 hours	<b>credits</b> (according to ECTS) 4.5	<b>semester</b> Sem. 6	<b>frequency</b> each even-semester	<b>duration</b> 16 meetings
<b>1</b>	<b>Types of courses</b> Elective	<b>contact hours</b> 63 hours	<b>independent study</b> 27 hours	<b>class size</b> 40 students	
<b>5</b>	<b>Prerequisites for participation</b> Must have taken Computer Network course.				
<b>2</b>	<b>Learning outcomes</b> IF-ILO-3 Graduates are able to develop professional careers in the field of computer science based on quality aspects, data-based decision making, be responsible, and make continuous improvements. IF-ILO-7 Mastering the theoretical concept and principles of computer science, especially in the aspect of algorithms, programming, intelligent systems, information management, parallel and distributed computing, information security, human-computer interaction, software engineering, and fundamentals of computer systems and networks. IF-ILO-11 Graduates are able to plan, develop, manage, and analyze the computer network-based system and the services running on top of them by considering the network security aspects.				
<b>3</b>	<b>Subject aims</b> <ol style="list-style-type: none"> <li>1. Students are able to explain the basic concepts of infrastructure automation and network services</li> <li>2. Students are able to design an automated network infrastructure provision mechanism in a case study</li> <li>3. Students are able to apply automated configuration management mechanisms in a case study</li> <li>4. Students are able to apply the concept of Continuous Integration / Continuous Deployment (CI/CD) in a case study</li> <li>5. Students are able to explain the basic concepts of software-defined networking (SDN)</li> <li>6. Students are able to apply SDN flow management in a case study</li> <li>7. Students are able to design SDN-based applications in a case study</li> <li>8. Students are able to explain the application of artificial intelligence in the field of computer networks</li> </ol>				
<b>4</b>	<b>Teaching methods</b> lectures, case study, class discussion, presentation				
<b>6</b>	<b>Assessment methods</b>				

	assignment, mid-term examination, end-term examination, project evaluation, practical-skill assessment
<b>8</b>	<b>This module is used in the following degree programmes as well</b>
<b>10</b>	<b>Responsibility for module</b>
<b>11</b>	<p><b>Other information</b></p> <ol style="list-style-type: none"> <li>1. Edelman, Jason, Scott S. Lowe, and Matt Oswalt. Network Programmability and Automation: Skills for the Next-Generation Network Engineer. " O'Reilly Media, Inc.", 2018.</li> <li>2. Geerling, Jeff. Ansible for DevOps: <i>Server</i> and configuration management for <i>humans</i>. <i>Leanpub</i>, 2015.</li> <li>3. Goransson, Paul, Chuck Black, and Timothy Culver. Software defined networks: a comprehensive approach. Morgan Kaufmann, 2016.</li> <li>4. Goransson, Paul, Chuck Black, and Timothy Culver. Software defined networks: a comprehensive approach. Morgan Kaufmann, 2016.</li> </ol>