Óbuda University John von Neumann Faculty of Informatics				Institute for Cyber-physical Systems
Name and code: **Credits:** **Advanced network technologies and their security NKXAT1EMNF** 2024/25 year I. semester				
Subject lecturers: Dr. Kail Eszter				
Prerequisites (with code):	Network technologies			
Weekly hours:	Lecture: 2	Seminar: 0	Lab. hours: 2	Consultation: 0
Way of assessment:	exam			

Course description:

Goal: The goal of the course is to enable students to design, configure, and manage small, medium and large-scale enterprise networks, taking modern security considerations into account.

Course description: The course material introduces the design concepts of LAN and WAN networks and their scalability options, familiarizing students with advanced routing solutions, redundancy protocols and their vulnerabilities. During the semester, students will learn about VPN technologies (SSL VPN, MPLS VPN, DMVPN), as well as next-generation firewall and IDS/IPS technologies.

Lecture schedule

Education week	Topic
1.	Switching and routing basics I.
2.	Switching and routing basics II.
3.	Redundancy protocols
4.	Advanced routing protocols
5.	Introduction to security of computer networks, security threats
6.	AAA
7.	Protection of network devices
8.	Firewall generation, technologies
9.	Next Generation Firewalls
10.	IDS/ IPS solutions
11.	VPN technologies I.
12.	VPN technologies II.
13.	Lab exam
14.	Lab exam

Midterm requirements

Successful lab exam.

Final grade calculation methods

The final grade will be the average of the lab exam and oral exam results, but both of them should be successful.

Type of exam

Oral exam

Type of replacement

Oral exam can be repeated once in the exam period

References

Omar Santos: CCNP and CCIE Security Core; Official Cert Guide, Cisco Press, 2020, ISBN: 0135971977 Edgeworth Brad: CCNP and CCIE Enterprise Core, Official Cert Guide, Cisco Press, 2019, ISBN13: 9781587145230