

Faculty: FACULTY OF TELECOMMUNICATIONS AND MANAGEMENT

Department: INFORMATION TECHNOLOGIES

Professional Field: 5.3 COMMUNICATION AND COMPUTER TECHNOLOGY

Specialty: CYBER SECURITY OF COMMUNICATIONS TECHNOLOGIES

Educational-qualification degree: BACHELOR

LEARNING COURSE DESCRIPTION

1.Course title: Access Control Systems

2.Course code: B.43.062.2

3.Type of the course: Mandatory course

4.Level: Bachelor

5.Year of study: 4

6.Semester: 8

7.Number of credits: 4 credits

8.Name of the lecturer: Assoc. Prof. Aleksandar Tsenov, Ph.D.;

9.Course learning outcomes:

The aim of the course is to acquaint students with the basics of operation, design and operation and conduct of engineering activities and technical means used for security of sites, systems and information. Methodologies for determining the required level of physical security of objects, systems and information. Principles for building access control and management systems (ACS). The main parameters and principles of operation of the ACS

Basic knowledge on:

- ✓ the methods and technical means for protection of the objects and the information processed with technical means;
- ✓ the methods and means for control of the effectiveness of protection of the objects and the information from leakage through technical channels;
- ✓ the basics of the organization of technical protection of the sites and the information about the sites on the basis of the information technologies and specialized ACS.

Practical skills for

- ✓ the main normative and legal acts in the field of information security and protection of objects and information, as well as regulatory methodological documents in this field;
- ✓ the modern concept for protection and security of sites; the levels of physical security of the sites; the basics of the engineering security of the guarded sites;
- ✓ the peculiarities of different detector, signal and fire-fighting systems, as well as their principles of operation; reception and control devices and switching devices; security and security messaging systems, fire alarm systems;
- ✓ the main characteristics of the systems for collecting and processing information; the main characteristics of video surveillance systems; the main characteristics of the access control and management systems; integrated site security systems;

to be able to:

- ✓ to analyze and assess the threats to the information and physical security of the site;
- ✓ to apply local and foreign standards for design, development and security assessment of the ACS;
- ✓ to apply the acquired knowledge in solving practical tasks on the organization of site security;
- ✓ to organize preliminary studies of the objects of informatization;
- ✓ to develop and use already created project documentation;
- ✓ to substantiate the chosen decisions for ensuring the technical security of sites.

to master:

- ✓ skills for working with legal and normative acts;
- ✓ methods and means for detecting threats;
- ✓ methods for technical protection of information and objects;
- ✓ methods for formation of the requirements for protection of sites;

✓ the methods for checking the security of sites and informatization in accordance with the requirements of the normative documents;

✓ professional terminology.

10. Teaching methods:

The way of teaching is based on a lecture course and exercises, they contain problem solving, case studies and creative thinking. The training on "ACCESS CONTROL SYSTEMS" is carried out in the sixth semester, according to the current curriculum through lectures, two lessons per week for 10 weeks and practical exercises grouped into one lesson per week for 10 weeks.

11. Prerequisites:

Students should have studied Fundamentals of Information Technology, Materials and Electronic Components, Fundamentals of Security, Information Technology Security, Alarm Security Equipment, Technical Security Systems.

12. Course contents:

The following topics are included in the course: Introduction to the ACS; Business requirements for ACS; Security system standards; Identification methods; Principles of operation of recording (reading) devices; Biometric control; Interfaces; Purpose and main characteristics of the ACS controllers; System functions; Security levels; ACS management. Service and operation.

13. Bibliography

Basic literature:

1. Teaching team, Operating Systems – IT-carrier, (with exercises), <https://it-kariera.mon.bg/e-learning>, 2020,
2. Commands in Linux, Assenevtsi, Sofia, 2019.
3. Introducing Windows Server 2019 – now available in preview., Windows Server Blog, 2020
4. Linux – server and network protection, Assenevtsi, Sofia, 2020.
5. Denis Kolisnitshenko, Windows 10 - selftraining, Assenevtsi, Sofia, 2020.
6. Learning Microsoft Windows Server 2012 dynamic access control, Microsoft Press, U.S., 2017.

Additional literature:

1. Andrew Tanenbaum, H. Bos, Modern operating Systems, fourth edition, 2015
2. Silberschatz, Galvin and Gagne, Operation systems concepts, 9-th edition, 2013
3. Silberschatz, Galvin and Gagne, Important OS Papers, collection, 2015
4. Введение в Microsoft Windows Server 2019, Microsoft Press, U.S., 2019.
5. Mathers, Bill; Poggemeyer, Liza; Tobin, John, "What's new in Active Directory Federation Services for Windows Server 2016". Microsoft Docs. Windows Server, Identity and access. 2017.

14. Assessment methods and criteria:

The course ends with the formation of the final grade through the assessment of the written test and the grade obtained in the current classes (points from laboratory exercises and tests performed to check the theoretical and practical mastery).

1. Requirements for the assessment of the six-point system

Completed semester obligations

2. Formation of the final mark

Forming an assessment in the training course at each of the above stages, according to the points obtained and their ranking according to the six-point system is given in Table 1.

Table 1.

Number of points	Assessment According to the 6-point Scale System
0 – 20	Fail 2 (F)
20 – 39	Fail 2 (FX)
40 – 49	Satisfactory 3.00 (E)
50 – 59	Satisfactory 3.00 (D)
60 – 69	Good 4.00 (C)
70 – 84	Very good 5.00 (B)

85 – 100	Excellent 6.00 (A)
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15. Language of instruction: Bulgarian