**Security in e-business systems (ECTS credits: 8)**

Language: the course is offered in English, Serbian and Hungarian.

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**Course description:**

Basic concepts of computer security. Symmetric and asymmetric cryptography. Cryptographic protocols and standards. Cryptanalysis. Digital signatures, keys and certificates, electronic payment systems. Secure protocols. The concept of authentication and authorization and possible vulnerabilities. Cryptographic API services, hashing. Security risks of web applications, web systems and e-business systems. Types and subtypes of CSRF, XSS and SQL injection attacks. Politics of the same origin. Implementation of security techniques and methods in the development of electronic business systems. Application of network functions and protocols in PHP programming language. Vulnerability of third-party libraries and components.

**Aims:**

The main goal of the course is the education and training of students to master the theory and practical application in the field of creating secure electronic business systems. The main goal of the course is to achieve a number of sub-goals: -understanding security threats in e-business systems -understanding the types and subtypes of attacks on web applications -understanding protection techniques against web attacks -understanding cryptographic algorithms, security protocols, digital signatures, keys and certificates; -acquisition of competencies and skills necessary for the proper use of security techniques and methods of PHP programming language and other Internet technologies in the development of web applications and web systems of electronic business.

**Learning outcomes:**

After completing the course the student should be able to:

* understand security threats related to web applications and web-based e-business systems;
* independently assess security risk and to select appropriate protection methods;
* develop web systems for work in client / server network environment
* use appropriate protection methods and techniques in the development of web applications and web systems
* Independently create secure e-business systems.