Pavol Jozef Šafárik University in Košice, Faculty of Medicine
Department of Medical Informatics

CURRICULUM OF THE COURSE

Subject:	Computer Biometrics		
Prerequisites:			
Study programme:	General medicine	***Form of study:***	daily
Category:	compulsory elective	***Study period:***	5
Teaching form:	practicals	***Range:***	1 hours / week
Evaluation:	examination	***Credits:***	2

Week	*Practical lesson*
1.	**Basic terms.** Introduction to the course. Meaning and the main aims of biometrics.
2.	**Brief introduction into the statistics.** Statistical analysis of obtained observations and measurements. Examining data analysis.
3.	**General theory of statistical hypotheses testing.** Null hypothesis. One sided alternative hypothesis, two sided alternative hypothesis. Creation of testing statistics. Significance level – p, power of the test.
4.	Demonstration of individual tests utilization. Calculation of test power in solving of specific tasks.
5.	**Data protection.** Data protection in information systems, rules of safe and confidential communication. Introduction into cryptography.
6.	**Biometrics.** Unique identification of persons based on unique physiological characteristics of humans. Advantages and disadvantages of biometrics based authentication.
7.	Authentication and identification. Electronic signature as one of the possibilities to authenticate persons.
8.	History of biometrics systems. *Written test.*
9.	Advantages of storage and utilization of biometrics data in digital form. Legal aspects of obtaining and processing of biometrics data.
10.	Requirements for biometrics techniques properties regarding statistical reliability.
11.	Description of selected and commonly applied authentication methods used to identify persons, e.g. fingerprint, shape of the hand, face, voice, iris image, manual sign.
12.	Continuation. Description of selected and commonly applied authentication methods used to identify persons, e.g. fingerprint, shape of the hand, face, voice, iris image, manual sign. *Practical test.*
13.	Advantages of biometrics based system utilization in identification and authentication of persons in medicine and others disciplines.
14.	Possibilities of biometrics signs and statistical methods utilization to solve concrete task using available statistical software and interpretation of results. *Knowledge evaluation.*

Requirements to complete the course:

1. 100% and active attendance.
2. Min. 60% from each test during the term.
3. Elaboration of all given classworks.
4. Final exam.

Recommended literature:

1. Dale E. Mattson, Ph.D., Statistics, Difficult concepts, understandable explanations, Bolchay - Carducci Publishers, 1999.
2. Douglas G. Altman, Practical Statistics for Medical Research, CHAPMAN @ HALL, London, 1994.
3. Notes from exercises.

Last modified: 10. February 2015