

SYLLABUS

The cycle of instruction 2018-2024 INT

Module/course name:	Information Technology; A Basic Introduction to Information Technology with Elements of Medical Statistics		Module code	
Faculty:	I Faculty of Medicine with Dentistry Division II Faculty of Medicine with English Division			
Major:	Medical			
Specialty:				
Level of study:	I (Bachelor studies) <input type="checkbox"/> II (Master studies) <input type="checkbox"/> integrated Master studies X III (Doctoral studies) <input type="checkbox"/>			
Mode of study :	full-time X			
Year of study:	I <input type="checkbox"/> II X III <input type="checkbox"/> IV <input type="checkbox"/> V <input type="checkbox"/> VI <input type="checkbox"/>	Semester	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 X 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/>	
Module/course type:	obligatory X elective <input type="checkbox"/>			
Language of instruction:	Polish <input type="checkbox"/> English X			
Form of education	Hours			
Lecture				
Seminar				
Laboratory class	40			
E-learning				
Practical class				
Internship				
Other				

Student's work input (participation in class, preparation, evaluation, etc.)	Student's hourly workload
1. In class	40
2. Student's own work	10
Summary of the student's workload	50
ECTS points for module/course	2

Educational objectives:

The course covers basic practical knowledge from the function of the modern personal computers. During the classes we talk about PC architecture, operating systems, file management, network knowledge, internet and its opportunities of application. The goals of this course are as well: demonstrating the ability to use a word processing application to create everyday letters and documents/papers; understanding the concept of spreadsheets and to demonstrate an ability to use spreadsheet to produce accurate work outputs; understanding the concept of a database and demonstrate competence in using a basic database; using spreadsheet in preparing the basic statistics from a database set. The course covers descriptive statistics too. Basic concepts and the ways of preparing the description of a sample will be presented. Students will be introduced to measures of central tendency and dispersion. Topics include the correlation of the variables. It provides an overview of biostatistical methods and concepts used in the health sciences emphasizing interpretation and concepts. Introduction to computer assignments using real data and statistical software.

The matrix of learning outcomes for module/ subject with reference to verification methods of the intended educational outcomes and forms of instruction:

Learning outcome code	A student who has obtained a credit for the module/course has the knowledge/skill to:	Methods of verifying the achievement of the intended learning outcomes:	Form of instruction * provide the symbol
II.W 31	knows essential computer methods and biostatistical medical databases used in medicine, including, spreadsheets, basics of the computer graphics	Test/ Practical exam	LC
II.W32.	knows essentials methods of a statistical analysis used in population and diagnostic studies	Test/ Practical exam	LC
II.U16.	can plan and carry out research and interpret his results and draw conclusions	Test/ Practical exam	LC
II.U 13	is using databases, in Internet and searches for the needed information with the use of available tools	Test/ Practical exam	LC

L- LECTURES; LC – LABORATORY CLASSES

EXAMPLES OF METHODS VERIFYING THE ACHIEVEMENT OF THE INTENDED LEARNING OUTCOMES:

In terms of knowledge: Oral exam (*non-standardized, standardized, traditional, problem-based*).

Written exam – the student produces/identifies answers (*essay, report; structured short-answer questions /SSQ/; multiple choice questions /MCQ/; multiple response questions /MRQ/; matching test; true/false test; open cloze test*).

In terms of skills: practical exam; Objective Structured Clinical Examination /OSCE/; Mini-CEX (mini – clinical examination); completion of a given assignment; project, presentation.

In terms of social competences:

A reflective essay; an extended observation by a supervisor/tutor; 360-degree assessment (feedback from teachers, peers, patients, other co-workers); self-assessment (portfolio included).

Course content: (use keywords referring to the content of each class following the intended learning outcomes):

1. Spreadsheets: working with spreadsheets; cells; rows and columns; formulas and functions; basic functions; functions from date&time category; use mixed cell references; basic format of the cells; introduction to the charts; manage the output;
2. Spreadsheets: logical functions; building more complex formulas (one function within another one)
3. Spreadsheets: logical functions – exercises; conditional formatting
4. Database set in spreadsheets: basic analysis; format the database; freeze panes, split window; prepare the statistics by sumif() countif() etc functions; name the ranges

5. Mid-sem exam, partial 1

6. Introduction to Biostatistics: Defining basic concepts, Data types. Introduction to StatSoft Statistica and Data Entry; preparing the questionnaires; frequency tables (Tabulations and Graphical Summaries)
7. Measures of central tendency and dispersion.
8. Measures of central tendency and dispersion: exercises and usage; Coefficient of variation; Symmetry and skewness; empirical rule.
9. Correlation between quantitative variables. Correlation matrices. Repetition.

10. Mid-sem exam, partial 2

11. Hypothesis testing: stating hypotheses, test statistics, P-values, Statistical significance; normal shape and its properties; test for a normal shape of distribution as an example of the procedure. Using software to obtain p-value;
12. Normality test: Graphical interpretation. Comparing two unpaired groups: Mann-Whitney U test
13. T-student test for unpaired two groups. Testing the homogeneity of the variance. Interpretation of the results, Cochran-Cox test.
14. Pearson's Chi-square Test for Independence: test designed to analyze categorical data. Repetition.

15. Mid-sem exam, partial 3

Obligatory literature for lectures and labs:

1. MS Office trainings; MS Office Online Help: <https://support.office.com>
2. Biostatistics: A Foundation for Analysis in the Health Sciences, Wayne W. Daniel
3. Perry R.Hilton: Statistics Explained 2nd Edition, Routledge 2004

Complementary literature for lectures and labs:

1. Medical Statistics at a Glance, Aviva Petrie
2. Medical Statistics: A Commonsense Approach, Michael J. Campbell, David Machin
3. StatSoft: Electronic Statistics Textbook; <http://www.statsoft.com/textbook>

Requirements for didactic aids (multimedia projector, movie camera, etc.)

Classroom with multimedia projector, whiteboard; software: StatSoft Statistica (English Version), MS Office 2010 or newer (or alternative)

Conditions for obtaining a credit for the subject:

- behavior policy; attendance: not more than **one** absence without excuse from the Dean's Office is allowed
- **being late twice** is treated as absence without excuse
- passing EACH of the midsemester quiz (can be expected every week without prior announcement) and midsemester partial at the end of each section of the course
 - should the student get an unsatisfactory mark during the quiz/mid semester exam, he/she has the right to take up one make-up quiz/partial from the failed quiz/partial within **two weeks** and before the examination session
 - should the student get an unsatisfactory mark during the retake of quiz/partial, he/she gets unsatisfactory grade as "the final grade term 1" at the end of the course; he/she has the right to take up one exam which covers the whole course topics in the retake session
- student gets *Fail due to the # of absences* when too many classes are missed
- if a student does not appear at the quiz/partial, it is recorded as 'absent'. A justification ought to be handed in or sent to the teacher's office within 3 days from the quiz/exam. In case of unexcused absence, the teacher writes unsatisfactory mark. After receiving teacher's approval, the new term is set.
- student can be exempted from taking the partial at the end of the course – the decision depends on grades from quizzes and is taken by teacher only
- final grade depends on partials and quizzes first of all; it is **NOT** the arithmetic mean from the grades
- end of course: *pass with grade*

Grades:

- | | | |
|---------------------------|-----|-------------------------------|
| • from 90% | 5 | very good |
| • from 84% and below 90% | 4,5 | better than good |
| • from 72% and below 84% | 4 | good |
| • from 64% and below 72% | 3,5 | quite good |
| • above 50% and below 64% | 3 | satisfactory |
| • up to 50% | 2 | unsatisfactory, failing grade |

**The name and address of the department/clinic, where the course is taught (module/course);
contact details (phone number/ email address):**

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Signature of the head of the department/clinic

Dean's signature

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Date of submission: 14.02.2020

