**SYLLABUS**

Academic year 2017/2018

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| **Name of a course / module** | **Biostatistics** |
| **Name of a department where course is held** | **Department of Statistics and Medical Informatics** |
| **E-mail of department** | **statinfmed@umb.edu.pl** |
| **Faculty of** | Medicine with Division of Dentistry and Division of Medical Education in English |
| **Name** **of a field of study** | Medicine |
| **Level of education** | One cycle 6 year masters degree programme |
| **Form of study** | full time □ part time □ |
| **Language of instruction** | Polish □ English □ |
| **Type of course** | obligatory □ facultative □ |
| **Year of study / Semester** | I □ II □ III □ IV □ V □ VI □ | 1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 10 □11 □ 12 □ |
| **Introductory courses with preliminary requirements** | Information Technology - knowledge of basic and advanced spreadsheet functions, in particular Data Analysis module, the ability to work with databases - the realization of learning outcomes in terms of knowledge, skills and social competences of the previous years of study. |
| **Number of didactic hours with specification of forms of conducting classes** | 30 - Classes |
| **Assumptions and aims** **of the course** | To acquaint the students with the ways and methods of analysis of empirical material and methods of drawing conclusions. |
| **Didactic methods** | * Blackboard exercises
* Performing individual practical exercises with computers
* Discussion
* Multimedia presentation
* Consultation (every two weeks on Mondays)
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| **Full name of the person conducting the course** | Employed scientific and teaching staff |
| **Full name of the person responsible for teaching** | dr Robert Milewski |

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| **Symbol and number of learning outcomes according to the teaching standards and other learning outcomes** | **Description of directional learning outcomes** | **Form of classes** | **Verification methods for achieving intended learning outcomes**  |
| **Knowledge** |
| B.W31 | He /She knows basic methods of information technology and biostatistics in medicine, including medical database, spreadsheets and computer graphics | classes | *Summarizing methods:*- *The written final credit**Forming methods:**- observation of the student's work**- assessment of preparation for classes**- discussion in class*  |
| B.W32 | He /She knows basic methods of statistical analysis used in population and diagnostic researches | classes |
| B.W34 | He /She knows principles of conducting scientific, surveillance and experimental study as well as in vitro research for the development of medicine. | classes |
| **Skills** |
| B.U12 | He /She is skilled at choosing right statistical test, making fundamental statistical analyses and applying appropriate methods of presenting test results; interpreting meta-analysis results and performing survival analysis | classes | *Summarizing methods:*- *The written final credit**Forming methods:**- observation of the student's work**- assessment of preparation for classes**- discussion in class* |
| B.U13 | He /She is skilled at explaining the difference between prospective and retrospective study, between clinical-control and randomized study, case descriptions and experimental study, classifying those according to credibility and quality of scientific evidence | classes |
| B.U14 | He /She is skilled at planning and performing simple scientific research, interpreting the results and drawing conclusions | classes |
| **Social competence** |
|  | He /She recognizes his/her own diagnostic and therapeutic limitations, educational needs, planning of educational activity | classes | *Summarizing methods:**Continuous assessment by teachers (observation)**Forming methods:**- observation of the student's work**- discussion in class* |
|  | He /She implements the principles of professional camaraderie and cooperation with representatives of other professionals in the range of health care | classes |
|  | He /She observes doctor-patient privilege; and patient rights | classes |

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| **ECTS points** | *Należy podać liczbę punktów ECTS przypisaną przedmiotowi.* |
| **Student Workload** |
| **Form of activity** | **Number of hours to complete the activity** |
| **Classes that require the participation of a teacher** |
| 1. Realization of the course: lectures (according to the curriculum )
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| 1. Realization of the course: classes (according to the curriculum )
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| 1. Realization of the course: seminars; (according to the curriculum)
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| 1. Realization of the course: electives
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| 1. Participation in consultation
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|  | Total hours:30 |
| **Student self-study***1 punkt ECTS oznacza 25-30 godzin pracy studenta w różnych formach, takich jak np.:* |
| 1. Preparation for the theoretical and practical classes (realization of projects, documentation, case description etc.)
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| 1. Preparation for tests/credits
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| 1. Preparation for an exam/final test-credit
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|  | Total hours: |

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| **Course contents:** *proszę wpisać hasłowo tematykę poszczególnych zajęć, pamiętając, aby przekładała się ona na zamierzone efekty kształcenia* |
| **Learning outcomes** **(symbol and number)** | **Topics** |
| 1. B.U13 - He /She is skilled at explaining the difference between prospective and retrospective study, between clinical-control and randomized study, case descriptions and experimental study, classifying those according to credibility and quality of scientific evidence

B.W34 - He /She knows principles of conducting scientific, surveillance and experimental study as well as in vitro research for the development of medicine. | 1. Basic statistical terms
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| 1. B.W31 - He /She knows basic methods of information technology and biostatistics in medicine, including medical database, spreadsheets and computer graphics

B.W32 - He /She knows basic methods of statistical analysis used in population and diagnostic researches | 1. Grouping and presentation of research material
 |
| 1. B.U12 - He /She is skilled at choosing right statistical test, making fundamental statistical analyses and applying appropriate methods of presenting test results; interpreting meta-analysis results and performing survival analysis

B.U14 - He /She is skilled at planning and performing simple scientific research, interpreting the results and drawing conclusions | 1. Calculation of descriptive statistics from empirical data
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| 1. B.U12 - He /She is skilled at choosing right statistical test, making fundamental statistical analyses and applying appropriate methods of presenting test results; interpreting meta-analysis results and performing survival analysis

B.U14 - He /She is skilled at planning and performing simple scientific research, interpreting the results and drawing conclusions | 1. Confidence intervals and determining minimum sample size
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| 1. B.U12 - He /She is skilled at choosing right statistical test, making fundamental statistical analyses and applying appropriate methods of presenting test results; interpreting meta-analysis results and performing survival analysis

B.U14 - He /She is skilled at planning and performing simple scientific research, interpreting the results and drawing conclusions | 1. Application of parametric tests
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| 1. B.U12 - He /She is skilled at choosing right statistical test, making fundamental statistical analyses and applying appropriate methods of presenting test results; interpreting meta-analysis results and performing survival analysis

B.U14 - He /She is skilled at planning and performing simple scientific research, interpreting the results and drawing conclusions | 1. Application of non parametric tests
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| 1. B.U12 - He /She is skilled at choosing right statistical test, making fundamental statistical analyses and applying appropriate methods of presenting test results; interpreting meta-analysis results and performing survival analysis

B.U14 - He /She is skilled at planning and performing simple scientific research, interpreting the results and drawing conclusions | 1. Investigating the relationship between characteristics
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| 1. B.U12 - He /She is skilled at choosing right statistical test, making fundamental statistical analyses and applying appropriate methods of presenting test results; interpreting meta-analysis results and performing survival analysis
 | 1. The basic elements of survival analysis
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| 1. B.W31 - He /She knows basic methods of information technology and biostatistics in medicine, including medical database, spreadsheets and computer graphics

B.W32 - He /She knows basic methods of statistical analysis used in population and diagnostic researches | 1. The use of a statistical package Statistica for carrying out calculations
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| **Obligatory textbook:** *(1-2 pozycje)* |
| Aviva Petrie, Caroline Sabin “Medical Statistics at a Glance”, Blackwell Science, 2000Stanton A. Glantz “Primer of Biostatistics”, McGraw-Hill, 2002.Betty R. Kirkwood, Jonathan A.C. Sterne “Essential Medical Statistics”, Blackwell Science, 2003 |
| **Optional textbook:** *(1-2 pozycje)* |
| Betty R. Kirkwood, Jonathan A.C. Sterne “Essential Medical Statistics”, Blackwell Science, 2003 |

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| **Criteria for assessing the achieved learning outcomes and the form and conditions for receiving credit:** *Należy określić w szczególności: zasady dopuszczenia do egzaminu, zwalniania z egzaminu, sposób i warunki zaliczenia zajęć, łącznie z określeniem zasad zaliczania nieobecności oraz określeniem liczby godzin nieobecności kwalifikujących do niezaliczenia przedmiotu oraz możliwości i formy wyrównywania zaległości* |
| In case of absence the student has an obligation to justify it and do the exercises as his/her homework. Admission to the final credit is based on the partial credits. If the number of absences exceeds 40%, the student is not allowed to credit a course. |

22.09.2017 dr Robert Milewski

*(date and signature of the person preparing the syllabus)*

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 *(date and signature of the Head of the and (course coordinator)*

 *Department where the course is held)*