**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) | |
| **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 ) | |  | |
| 1. Realization of the course: classes (according to the curriculum ) | | 30 | |
| 1. Realization of the course: seminars; (according to the curriculum) | |  | |
| 1. Realization of the course: electives | |  | |
| 1. Participation in consultation | |  | |
|  | | 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.) | | |  |
| 1. Preparation for tests/credits | | |  |
| 1. Preparation for an exam/final test-credit | | |  |
|  | | | 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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, 2000  Stanton 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)*