

**Subject card**

|   |  |  |  |            |                               |         |     |
|---|--|--|--|------------|-------------------------------|---------|-----|
| Subject name and code                       | Probability Theory, PG_00100977  |  |  |            |                               |         |     |
| Field of study                              | Mathematics  |  |  |            |                               |         |     |
| Date of commencement of studies             | October 2023   | Academic year of realisation of subject                  |  |            | 2025/2026                     |         |     |
| Education level                             | Bachelor's studies   | Subject group  |  |            |                               |         |     |
| Mode of study                               | full-time studies  | Mode of delivery   |  |            | at the university             |         |     |
| Year of study                               | 3  | Language of instruction                                  |  |            | Polish                        |         |     |
| Semester of study                           | 5  | ECTS credits   |  |            | 7.0                           |         |     |
| Learning profile                            | academic   | Assessment form  |  |            | exam                          |         |     |
| Conducting unit                             | Institute of Mathematics -> Faculty of Mathematics, Physics and Informatics -> Rector  |  |  |            |                               |         |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor   | dr hab. Piotr Szuca                                      |  |            |                               |         |     |
|   | Teachers   | dr Jacek Tryba<br>dr hab. Piotr Szuca                    |  |            |                               |         |     |
| Lesson types                                | Lesson type  | Lecture  | Tutorial   | Laboratory | Project                       | Seminar | SUM |
|   | Number of study hours  | 45.0   | 45.0   | 0.0        | 0.0                           | 0.0     | 90  |
|   | E-learning hours included: 0.0   |  |  |            |                               |         |     |
| Learning activity and number of study hours | Learning activity  | Participation in didactic classes included in study plan | Participation in consultation hours  |            | Self-study                    |         | SUM |
|   | Number of study hours  | 90   | 0.0  |            | 0.0                           |         | 90  |
| Subject objectives                          | The aim of the course is to familiarize the student with the basic concepts of probability theory.   |  |  |            |                               |         |     |
| Learning outcomes                           | Course outcome   |  | Subject outcome  |            | Method of verification        |         |     |
| Subject contents                            | 1. Probability space.2. Conditional probability and independence of events.3. Random variable and its probability distribution and cumulative distribution function.4. Independence of random variables.5. Expected value and variance of a random variable.6. Limit theorems. |  |  |            |                               |         |     |
| Prerequisites and co-requisites             |  |  |  |            |                               |         |     |
| Assessment methods and criteria             | Subject passing criteria   |  | Passing threshold  |            | Percentage of the final grade |         |     |
|   | tests  |  | 51.0%  |            | 50.0%                         |         |     |
|   | exam   |  | 51.0%  |            | 50.0%                         |         |     |
|   | observation of the student's attitude  |  | 51.0%  |            | 0.0%                          |         |     |
| Recommended reading                         | Basic literature   |  | 1. J. Jakubowski, R. Sztencel Wstęp do teorii prawdopodobieństwa, SCRIPT Warszawa 2001;2. Plucińska, E. Pluciński, Probabilistyka: Rachunek prawdopodobieństwa. Statystyka matematyczna. Procesy stochastyczne, Wydawnictwa Naukowo - Techniczne Warszawa 2000.3. W.. Kryszwicki i in. Rachunek prawdopodobieństwa i statystyka matematyczna w zadaniach4. J. Jakubowski, R. Sztencel, Rachunek prawdopodobieństwa dla (prawie) każdego, SCRIPT Warszawa 2006; |            |                               |         |     |

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|  | Supplementary literature | 1. G. Krzykowski, M. Szreder Rachunek prawdopodobieństwa i statystyka matematyczna2. M. Krzyśko, Wykłady z teorii prawdopodobieństwa, WNT Warszawa 2000;3. R. Bartoszyński, D. Niewiadomska-Bugaj Probability and Statistical Inference4. Freund, Miller, Miller John E. Friends Mathematical Statistics with Applications |
|  | eResources addresses     |  |
| Example issues/<br>example questions/<br>tasks being completed | not included             |  |
| Work placement   | Not applicable           |  |

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