STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Mathematical Probability**		Code **1011101221011006096**
Field of study **Safety Engineering - Full-time studies - First-**	Profile of study (general academic, practical) **(brak)**	Year /Semester **1 / 2**
Elective path/specialty **-**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**

Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**

No. of hours Lecture: **15** Classes: **30** Laboratory: **-** Project/seminars: **-**	No. of credits **3**

Status of the course in the study program (Basic, major, other) **(brak)**	(university-wide, from another field) **(brak)**

Education areas and fields of science and art	ECTS distribution (number and %**)**

Responsible for subject / lecturer:

Institute of Mathematics
email: office_@math.put.poznan.pl.
tel. 61665-2320
Faculty of Electrical Engineering
Ul. Piotrowo 3a, 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student knows basic notions in calculus, set theory and logic.
2	**Skills**	Student can operate a calculator, find and use proposed literature.
3	**Social competencies**	Student recognizes the necessity in deepening his knowledge. Student is conscious to operate in rational way. Student is active during classes.

Assumptions and objectives of the course:

The aim is to acquire basic statistical and probabilistic methods and develop the ability to use these methods to solve practical engineering problems.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. 1.   Student has a basic knowledge of probability theory, including the rights of probability theory useful to solve practical engineering problems. - [K1A_W04]

2. 2.   Student has a basic knowledge of mathematical statistics, including the methods of mathematical statistics useful to solve practical engineering problems. - [K1A_W04]

3. 3.   Student knows the basic techniques and tools used to solve simple engineering tasks using information technology and computer support. - [K1A_W25]

Skills:

1. 1.   Student can acquire, integrate, interpret information from literature, databases and other carefully selected sources, and to draw conclusions and formulate and justify opinions.   - [K1A_U01]

2. 2.   Student is able to use information and communication technology for the tasks of typical engineering activities. - [K1A_U07]

3. 3.   Student is able to assess the usefulness of routine methods and tools to solve simple tasks of practical engineering, safety engineering characteristic and select and apply appropriate methods and tools and to use them effectively. - [K1A_U15]

Social competencies:

1. 1.　　Student understands the necessity of continuous learning and knows the possibilities of further education (first-, second and third degree, postgraduate courses) and of improving professional, personal and social competence. Student is able to argue the necessity of continuous learning. - [K1A_K01]

2. 2.　　Student is aware of their responsibility for their own work and is willing to obey the rules of collective work and to take responsibility for collaborative tasks. - [K1A_K03]

3. 3.　　Student can see cause and effect relationship in achieving the set of goals and rank alternative or competitive tasks. - [K1A_K04]

Assessment methods of study outcomes

Forming score:

a) classes: on the basis of written tests, oral answers, solving exemplary tasks;

b) lectures: on the basis of oral answers to questions about learned theoretical knowledge and solving practical examples.

Summary score:

a) classes: the average points obtained by the written tests or by the correction test - test of total material;

b) lectures: oral exam.

Course description

The basic concepts of probability will be discussed i.e.: probability space, random variables, elements of descriptive statistics, methods of statistical inference (estimation, hypothesis verification and analysis of correlation and regression).

Basic bibliography:

Additional bibliography:

Result of average student's workload

Activity	Time (working hours)
1. Lectures participation	15
2. Classes participation	30
3. Homework and tests preparation	30
4. Oral exam preparation	30
5. Individual consultation	1
6. Oral exam	1

Student's workload

Source of workload	hours	ECTS
Total workload	107	3
Contact hours	47	2
Practical activities	60	2