STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Selected topics in Mathematics**		Code **1010601121010344271**
Field of study **Mechanical Engineering**	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				No. of credits **4**
Lecture: **2**	Classes: **1**	Laboratory: **-**	Project/seminars: **-**	

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 %**)**

technical sciences
          Technical sciences
	4 100%
	          4 100%

Responsible for subject / lecturer:

dr Zdzisław Szafrański
email: zdzisław.szafranski @put.poznan.pl
tel. 61 665 26 87
Wydział Elektryczny
ul. Piotrowo 3A, 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	The basic mathematics of secondary school. Basic knowledge of mathematics, including algebra, analysis, differential and integral calculus (I semester).
2	**Skills**	Logical thinking, learning with understanding, the use of textbooks.
3	**Social competencies**	Awareness to learning and acquiring new knowledge.

Assumptions and objectives of the course:

Acquainted with the issues of differential and integral calculus of functions of several variables, differential equations, numerical series and function and the possibility of their use in directional objects.

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

Knowledge:

Skills:

Social competencies:

Assessment methods of study outcomes

Lecture: Assessment on the basis of written examination conducted in the examination session at the end of each of the semesters.

Exercises: evaluation based on the current control messages in the form of written tests, tests, answers.

Course description

Lectures and exercises:

Multiple integrals and their applications curvilinear and geometric and physical. Differential Equations (I row - with separated variables, linear, complete, linear differential equations of higher order, linear differential equations of higher order with constant coefficients - method of prediction and variation of constants).

Lecture:

Series of numbers and function (convergence criteria, conditional and absolute convergence, power series - differentiation and integration, expansion of functions in power series).

Basic bibliography:

Additional bibliography:

Result of average student's workload	
Activity	**Time (working hours)**
Student's workload	

Source of workload	hours	ECTS
Total workload	120	4
Contact hours	45	0
Practical activities	15	0