STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Mathematics**		Code **1010125111010340004**
Field of study **Transportation Engineering Extramural Second-**	Profile of study (general academic, practical) **(brak)**	Year /Semester **1 / 1**
Elective path/specialty **Road Engineering**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**
Cycle of study: **Second-cycle studies**	Form of study (full-time,part-time) **part-time**	

No. of hours				No. of credits **3**
Lecture: **20**	Classes: **10**	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 %**)**

Responsible for subject / lecturer:

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Faculty of Electrical Engineering
ul. Piotrowo 3A 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Knowledge of mathematics course of high school and I level of technical university
2	**Skills**	Ability of reflection and mathematical describtion of simply problem.
3	**Social competencies**	Work in a group

Assumptions and objectives of the course:

-Adopting and solidifying on examples mathematical basic meanings and ability of use of mathematical methods .

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

Knowledge:

1. It owns knowledge in range of chosen section of superior highest mathematics - [-]

2. Employment of highest mathematics in solving engineering problems. - [-]

Skills:

1. Ability to use methods of highest mathematics in engineering sciences, in construction and physics   - [KU_09]

2. Ability to use geometric interpretations and physical basic notions of highest mathematics   - [KU_09]

Social competencies:

1. It understands and apply mathematical methods in technical research - [-]

2. It knows limitations of personal knowledge and understands requirement of farthest education - [-]

3. Work in a group - [K_K01, K_K03]

Assessment methods of study outcomes

-Tests, written and oral examinations

Course description

- Real power series.

- Complex power series.

- Fourier series, trigonometric and exponential forms.

- Special functions.

- Elements of first order partial differential equations

Basic bibliography:

1. I. Foltyńska, Z. Ratajczak, Z. Szafrański, Matematyka dla studentów uczelni technicznych, Wydawnictwo Politechniki Poznańskiej cz. I , II, III.

2. F. Leja, Rachunek różniczkowy i całkowy. Państwowe Wydawnictwo Naukowe, Warszawa 2012.

3. E.Matwiejew

Additional bibliography:

1. W. Żakowski, Matematyka, t. IV, Wydawnictwa Naukowo-Techniczne, Warszawa, 2003.

<table>
<tr><td colspan="2" align="center">Result of average student's workload</td></tr>
<tr><td align="center">Activity</td><td align="center">Time (working hours)</td></tr>
<tr><td></td><td></td></tr>
<tr><td colspan="2" align="center">Student's workload</td></tr>
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Source of workload	hours	ECTS
Total workload	50	2
Contact hours	30	2
Practical activities	0	0