

Title <b>Mathematics Methods in Technology (Met.mat. w techn.)</b>	Code <b>1010401151010410744</b>
Field <b>EDUCATION IN TECHNOLOGY AND INFORMATICS</b>	Year / Semester <b>3 / 5</b>
Specialty -	Course <b>core</b>
Hours Lectures: <b>2</b> Classes: <b>2</b> Laboratory: -    Projects / seminars: -	Number of credits <b>5</b>
	Language <b>polish</b>

**Lecturer:**

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**Faculty:**

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**Status of the course in the study program:**

Core course of the study for Education in Technology and Informatics, Faculty of Technical Physics.

**Assumptions and objectives of the course:**

The course is intended to provide the student with the mathematics he needs for advanced study in engineering science

**Contents of the course (course description):**

curvilinear coordinates, differential vector operations in curvilinear coordinates, the Kepler problem. Calculus of variations ? one and more then one dependent and independent variable. Functions of a complex variable ? Cauchy?s integral formula, Laurent expansion, Hilbert transforms. Tensor analysis in electrodynamics and in special relativity. Fourier series. Fourier and Laplace transforms. Orthogonal polynomials.

**Introductory courses and the required pre-knowledge:**

The knowledge of mathematical analysis, algebra and physics.(the core course)

**Courses form and teaching methods:**

lecture + classes .

**Form and terms of complete the course - requirements and assessment methods:**

Written and oral examination.

**Basic Bibliography:**

1. FW. Byron, RF. Fuller ?Matematyka w fizyce klasycznej i kwantowej? vol. 1 i 2, PWN, W-a 19 73
2. D. Arfken ?Mathematical methods for physicists? Academic Press, NY 1966.
3. W Żakowski, W Leksiński ?Matematyka? cz. 4, WNT, W-wa 1995.
4. J Stefaniak, H Kamiński, G Sypniewska ? Kamińska ?Fizyka matematyczna? WPP 2008

**Additional Bibliography:**

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