Title **Computer methods in railway tracks**	Code **1010102121010120277**
Field **Civil Engineering Second-cycle Studies**	Year / Semester **1 / 2**
Specialty **Railways**	Course **core**
Hours Lectures: **1** Classes: **-** Laboratory: **1** Projects / seminars: **-**	Number of credits **2**
	Language **polish**

Lecturer:

> PhD Eng. Włodzimierz Bednarek
> tel. +48 61 6652407

Faculty:

> Faculty of Civil and Environmental Engineering
> ul. Piotrowo 5
> 60-965 Poznań
> tel. (061) 665-2413, fax. (061) 665-2444
> e-mail: office_dceeaf@put.poznan.pl

Status of the course in the study program:

> Subject belongs to group of specialist subjects.

Assumptions and objectives of the course:

> Learning bases and computer methods applied in range of railway tracks. Problem methodology of education. Understanding and application of principles of CWR track modelling. Advanced problems solutions of railway tracks mechanics. Understanding and application up-to-date calculation methods used in engineering practice.

Contents of the course (course description):

> Application range of computer methods in railway tracks, expert systems applied in PKP (Polish Nation Railways). System-aided decision in designing and railway track operation and maintenance. Computer-aided solutions of constructional and technological problems in railways. Project lectures: Computer engineering calculations (designing, railways operation and maintenance, stability non-linear problems). Computer-aided calculations of roadbed evaluation and strengthening.

Introductory courses and the required pre-knowledge:

> Knowledge from subject ranges: Railway lines 1; Railway tracks maintenance and technology; Materials and track structures technology; basic knowledge from the theory of the strength of materials and soils mechanics.

Courses form and teaching methods:

> Lecture illustrated with diagrams; project lectures assisted calculation examples.

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

> Examination; a well executed project and project?s exam.

Basic Bibliography:

Additional Bibliography: