



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Technical drawing [N1Trans1>RT]

### Course

Field of study

Transport

Year/Semester

1/1

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

part-time

Requirements

compulsory

### Number of hours

Lecture

9

Laboratory classes

9

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

5,00

### Coordinators

dr hab. inż. Przemysław Kurczewski prof. PP  
przemyslaw.kurczewski@put.poznan.pl

### Lecturers

### Prerequisites

Knowledge: basic in mathematics, technology Skills: using drawing instruments, logical thinking, obtaining information from the library Social competences: understanding the need for learning and acquiring new knowledge

### Course objective

Knowledge of methods and practical ability to use and create technical drawing documentation - machine drawing.

### Course-related learning outcomes

Knowledge:

The student knows the basic techniques, methods and tools used in the process of solving tasks in the field of transport, mainly of an engineering nature engineering

Skills:

The student is able to obtain information from various sources, including literature and databases (both in Polish and in English), integrate it properly, interpret it and critically evaluate it, draw conclusions, and

comprehensively justify his/her opinion.

The student can properly use information and communication techniques, applicable at various stages of the implementation of transport projects

Social competences:

The student is aware of the social role of a technical university graduate, in particular, he/she understands the need to formulate and transfer to the society, in an appropriate style, information and opinions on engineering activities, technological achievements, as well as the achievements and traditions of the transport engineer profession

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Lecture: Exam consisting of theoretical and drawing questions

Laboratory classes: Assessment based on a file with drawings (drawings made in class and at home) and a test consisting of drawing tasks

### Programme content

-Methods of recording the geometric form of the structure, geometric shaping of technical forms, determination of surface features of elements, standardized elements of recording, drawing economy

-Executive drawing:

a) rectangular projection, views and cross-sections (European projection method (reference system, layout of projections, basic projections), projection rules, presentation rules: flat surfaces and repeating elements; auxiliary views; detail of the construction enlarged; straight cutting plane; bended cutting plane; half cutting plane; partial cutting plane; walls cutting plane, ribs in selection, wheel arms, etc.; permeation lines in a simplified and accurate manner (e.g. penetration of cylinders, cuboid with a cylinder, theoretical penetration lines));

b) dimensioning (principles including: dimensioning from machining bases; dimensioning from structural bases; dimensioning from measuring bases; non-closing the dimensional chain; principle of non-repetition of dimensions; principle of omission of obvious dimensions; dimensioning of curvilinear contours; dimensioning of identical repeating elements; dimensioning of cone and wedge) and bevelled edges; regular polygons with an even number of sides and objects presented in one plan; dimensioning of arcs of circles and the length of the object being bent);

c) tolerances, roughness, (normal tolerances of free and tolerated linear dimensions; fits; shape and position tolerances; surface roughness); determination of heat treatment and coatings

d) drawing simplifications of welded, soldered and glued joints; threads and threaded connections; splined and multi-card connections; springs; bearings and seals; gear wheels and gears, ratchet mechanisms

-Assembly drawing, mechanical and kinematic diagrams

### Course topics

none

### Teaching methods

Lecture with multimedia presentation (form of informative lecture with elements of problem and conversation lecture)

Laboratories classes - classical methods, case study, discussion, practical work

### Bibliography

Basic

-Dobrzański T.: Rysunek techniczny maszynowy, WNT, Warszawa 2009

-Bober A., Dudziak M.: Zapis konstrukcji; Wyd. Politechniki Poznańskiej, Poznań 1996

Additional

-Rydzanicz I.: Rysunek techniczny jako zapis konstrukcji, WNT, Warszawa 2004

-Poradnik mechanika - chapter: Komunikacja techniczna, REA s.j., Warszawa 2008

## Breakdown of average student's workload

	Hours	ECTS
Total workload	120	5,00
Classes requiring direct contact with the teacher	18	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	102	4,00