# POZNAN UNIVERSITY OF TECHNOLOGY

## EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

# COURSE DESCRIPTION CARD - SYLLABUS

Course name
Quality Engineering [N2Trans1-TrN>IJ]

## Course

Field of study
Transport

Year/Semester
1/2

Area of study (specialization)
Low-emission Transport

Profile of study
general academic

Level of study
second-cycle

Course offered in
polish

Form of study
part-time

Requirements
compulsory

## Number of hours

Lecture
9

Laboratory classes
0

Other (e.g. online)
0

Tutorials
9

Projects/seminars
0

## Number of credit points
2,00

| Coordinators | Lecturers |
|---|---|
| dr inż. Żaneta Staszak<br>zaneta.staszak@put.poznan.pl | |

## Prerequisites

KNOWLEDGE: Student has fundamental knowledge about management of organizations and fundamental knowledge on innovation development in the field of transport SKILLS: Student possesses ability of perceiving and associating of phenomena occurring in management of market oriented organizations in the field of transport and is able to interpret them, draw practical conclusions and to formulate opinions SOCIAL COMPETENCES: Student has the awareness of importance and understands the effects of undertaking innovative, market oriented, activities, concerning pro-ecological issues

## Course objective

Transmitting to the students the knowledge of fundamental issues connected with understanding the role of quality category in modern economy and acquainting them with basic tools of quality engineering implementation in organizations with the special emphasis of ecological problems

## Course-related learning outcomes

Knowledge:
The student has advanced and in-depth knowledge of transport engineering, theoretical foundations, tools and means used to solve simple engineering problems

The student has advanced detailed knowledge of selected issues in the field of transport engineering
The student knows the economic, legal and other conditions of the operation of transport companies

Skills:
The student is able to obtain information from literature, databases and other sources (in Polish and English), integrate them, interpret and critically evaluate them, draw conclusions and formulate and exhaustively justify opinions
The student is able - when formulating and solving engineering tasks - to integrate knowledge from various areas of transport (and, if necessary, also knowledge from other scientific disciplines) and apply a systemic approach, also taking into account non-technical aspects
The student is able to make a critical analysis of existing technical solutions and propose their improvements (improvements)
The student is able - in accordance with the given specification, taking into account non-technical aspects - to design a complex device, system in the field of transport engineering or a process and to implement this project - at least in part - using appropriate methods, techniques and tools, including adapting the existing or developing new tools

Social competences:
The student understands the importance of using the latest knowledge in the field of transport engineering in solving research and practical problems
The student is aware of the need to develop professional achievements and to comply with the rules of professional ethics

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Control test and evaluation of student"s elaborations of the report on pro-environmental valuation of transportation means

## Programme content

Definition of quality. Changes of quality. Shaping of quality. Assurance and management of quality: standard, organizational, cultural approaches. Total Quality Management. Specificity of Japanese and American approach towards quality management. ISO 9000 standards. Quality assurance and management systems. Introduction to quality assurance and management systems documentation. Methods of technical objects and transport means quality evaluation. Relation between quality and environmental criteria. Introduction to quality costs. Quality of services

## Teaching methods

Lecture with multi-media presentation, analysis of evaluation methods of quality level of technical objects and transportation means

## Bibliography

Basic
1. J.S. Oakland, Total Quality Management. Butterworth Heinemann, Amsterdam 2003
2. K. Ishikawa, What is total quality control? Prentice-Hall inc., Englewood Cliffs 1988
Additional
1. Ch.-T. Su, Quality Engineering. CRC Press, Boca Raton 2013
2. T. Pfeifer, Quality management. Strategies, methods, techniques. Carl Hanser Verlag, Muenchen 200

## Breakdown of average student's workload

|  | Hours | ECTS |
|---|---|---|
| Total workload | 48 | 2,00 |
| 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) | 30 | 1,00 |