

Discipline: Civil Engineering, Geodesy and Transport

Candidate's Profile:

From the academic year 2023/24 onwards, only graduates of Master's degree study programmes offered by technical universities may apply for admission to the CUT Doctoral School in the scientific discipline of civil engineering, geodesy and transport. In cases particularly justified by the candidate's merit, and upon the consent of the Head of the Scientific Council, graduates of Master's degree programmes of non-technical universities may also be admitted to the recruitment process.

Conditions of the entrance examination:

- Profiling groups: **Civil Engineering, Geodesy and Transport**
- Candidates will be divided according to **the declared profiling group**
- The examination has the form of a test composed of 20 multiple-choice closed questions – date of the examination according to the [time schedule](#) of the CUT DS recruitment process;
- Candidate interview (on *inter alia* the individual research plan) – only those persons will be admitted who have obtained no less than 50% of the total possible score in the examination – date of the interview according to the [time schedule](#) of the CUT DS recruitment process;

Problem areas for the entrance examination:

Profiling group – Civil Engineering:

- Properties and applications of building materials and products;
- Building physics;
- Building protection against corrosion;
- Strength of materials;
- Structural mechanics (statics and dynamics);
- Theory of elasticity;
- Structural systems of buildings;
- Metal, reinforced concrete, prestressed concrete, masonry and timber structures: types, structural and computational problems;
- Industrial construction;
- Bridge structures;
- Computational methods in construction;
- Road and street design, road and railway surfaces;
- Transportation servicing of urbanised areas;
- Earthwork technology;

- Concrete and reinforced concrete works technology;
- Construction structures assembly;
- Construction process organisation and planning;
- Building site management.

Profiling group – Transportation:

- Classifications of transportation systems;
- Logistics and its role in transportation;
- IT services in logistic orders;
- Fundamental diagram of traffic engineering (systems of traffic data detection and collection, traffic streams, transportation networks and transportation infrastructure);
- Formulation of typical problems of management in transportation;
- Organisational structures of transportation system components management;
- Freightage process in road, rail and air transportation;
- Transportation infrastructure characteristics;
- Characteristics of means of transportation;
- Freightage parameters – demand for freightage services;
- Supply of freightage services: structure and factors affecting the volume and structure of supply;
- Internal and external costs of transportation;
- Marketing vs. logistics in a transportation enterprise;
- Analysis of transportation projects efficiency; Basic legal regulations in transportation.