



### 1. Course number and name

RB-S1-19-W2E, **Transportation Infrastructure II**

### 2. Credits and contact hours\*

1 ECTS, lectures: 15 hours\*\*, classes: 0 hours\*\*, project: 0 hours\*\*

### 3. Instructor's or course coordinator's name

Bartłomiej Grzesik PhD

### 4. Text book, title, author, and year

- The Convention on International Civil Aviation (Chicago Convention)

#### a. other supplemental materials

- Regulation of the Minister of Transport and Maritime Economy of 1 August 2019 on the technical conditions for public roads and their location. Journal of Laws 2019 No. 1643

### 5. Specific course information

#### a. brief description of the content of the course (catalog description)

##### Lectures:

(1) Airports: legal acts, definitions, basic terms, classification, (2) Airports: aerodrome reference code, pavements, technical requirements, (3) Supervising possibilities: laboratory and field testing: subgrade, stabilization, unbound layers, (4) Supervising possibilities: laboratory and field testing: asphalt binder, hot mix asphalt, pavements, (5) Road and bridge pavements in Poland: condition, monitoring, (6) Road and bridge pavements in Poland: maintenance, (7) final test.

#### b. prerequisites or co-requisites

No prerequisites and additional requirements

#### c. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program

Required.

### 6. Specific goals for the course

#### a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic

The student can:

- describe selected elements of aerodrome and basic mechanisms of load transfer,
- give technical classifications of airports,
- prepare a load statement for airport pavement,



- describe selected laboratory and field tests for: subgrade, unbound layers (aggregate), asphalt mixtures and pavements.

b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

K1A\_W06, K1A\_U12

### 7. Brief list of topics to be covered

1. Airports: legal acts, aerodrome, airport, aerodrome equipment, airfield, types of aerodrome, classification criteria, purposes, road runway, types of airports, airfield classification and technical criteria.
2. Airports: aerodrome reference code, airport terminal, rapid exit taxiway, apron, runway, taxiway, airport infrastructure, taxiways marking, clearway (CWY), stopway (SWY), LDA, TORA, ASDA, TODA, CWY, threshold marking, number and orientation of runways, ACN-PCN method, runway – requirements, runway shoulders, strips, examples of airports.
3. Supervising possibilities - laboratory and field testing: major objectives of testing, testing methods, subgrade tests, the plate load test, sieve analysis, the sand equivalent test, CBR, light weight deflectometer, abrasion test, frost resistance, density, stabilization with a cementitious binder.
4. Supervising possibilities - laboratory and field testing: the softening point, the penetration test, the Rolling Thin-Film Oven test (RTFOT), the bulk specific gravity test, rutting, moisture susceptibility, fatigue life, stiffness, surface deflection, pavement roughness, pavement layers thickness.
5. Road and bridge pavements in Poland: General Directorate for National roads and Motorways (statistic), Assessment of technical condition of road surface, pavement management system equipment, general causes of distress bituminous pavements.
6. Road and bridge pavements in Poland: bituminous repair methods – crack sealing, permanent repair of potholes, surface treatments, hot recycling, bituminous pavement repair – equipment.
7. Final test.

\*- Consultations were not included in the contact hours

\*\* - per semester