

Course Name: **Concrete technology**

Credits: 2

Class Hours: 32 h

1.Course Description:

The purpose of this module is to: introduce classification, properties and testing of technical properties of concrete constituents, fresh and hardened concrete; teach how to select proper concrete constituents and design concrete composition; describe processes in concrete production.

The course content: Aggregates for concrete and mortars. Mineral binders: cements, lime and gypsum. Additions and admixtures for concrete. Concrete according to the standard EN 206 Concrete – Part 1: Specification, performance, production and conformity. Properties of fresh and hardened concrete and their testing. Concrete mix design calculations. Technical processes in concrete production.

2.Teaching Objectives:

- familiarising students with legal regulations related to concrete as a structural material
- familiarising students with phenomena occurring during setting and hardening of concrete, mechanisms of admixtures and additions actions
- identifying processes and technological requirements in concrete production
- qualitative and quantitative selection of concrete constituents
- designing concrete mix proportions according to the specification
- evaluation of technical parameters of concrete in fresh and hardened state

3.Teaching Content & Schedule

The course includes 16 teaching hours of lecture (theory) and 16 teaching hours of laboratory classes.

One teaching hours equals to 45 minutes.

A series of lectures to provide students with an overview of the main issues relating to the properties, uses and long-term performance of concrete. A series of laboratory classes covering the testing of aggregate and cement, the manufacture and testing of fresh and hardened concrete.