

**Course Contents:**

Properties of construction material and their evaluation (creep, elastic modulus, fatigue, impact, etc.); test methods and specifications; Cement chemical composition, properties such as setting, strength, fineness, hydration; Aggregates sources, properties, chemical reactivity; Concrete constituents, proportioning, properties in fresh and hardened state, characteristic strength, quality control (sampling, acceptance, etc.), transportation and placing, testing (including NDT), porosity; Admixtures chemical, mineral; Steel properties, types of steel, steel in civil engineering; Bricks manufacture, properties and classification; masonry bonds; New materials Fibre reinforced plastics (FRPs), epoxy-coated bars, etc. with performance requirements, test methods, specifications; Bitumen source, composition, characterization, various forms, tests on bitumen; Bituminous mix design; Soil description, engineering geology of soils and their formation, index properties of soil, classification of soils.