



Faculty of Civil Engineering

Warsaw University of Technology

Diploma thesis proposals for BSc. |(1st level) CE students

Unit:

Institute of Building Engineering

Department of Concrete and Metal Structures

Division of Concrete Structures

NOTE: In the Division of Concrete Structures, there is a possibility to arrange a topic of the thesis with a supervisor, taking into account the specified interests of a diploma student.

Supervisor	Thesis topic	Description	Specialisation
dr inż. Michał Głowacki, dr inż. Bartosz Grzeszykowski, dr inż. Piotr Knyziak, prof. dr hab. inż. Robert Kowalski, dr inż. Marta Lutomirska, dr inż. Marcin Niedośpiął, prof. dr hab. inż. Elżbieta Szmigiera, dr inż. Marek Urbański, mgr inż. Paweł Chudzik, dr inż. Maria Włodarczyk, dr inż. Julia Wróblewska, dr inż. Kostiantyn Protchenko, dr inż. Rafał Ostromecki	Design of a reinforced concrete structure of a detached house The project of a reinforced concrete residential building with an underground garage The project of selected structural elements of a multi-family residential building Design of selected reinforced concrete elements in a parking garage / commercial building with a beam-and-slab structure A five-storey reinforced concrete office buildings design Design of a reinforced concrete frame structure of car showroom Design of an overground reinforced concrete sludge tank with 5 chambers Design of a reinforced concrete structure for a residential and commercial building with an underground parking lot Design of a reinforced concrete structure of a multi-storey car park Structural design of selected reinforced concrete elements for an administration building Architectural and structural design of a multi-family residential building Structural design of selected reinforced concrete elements of a governmental administration building	The topic and detailed scope of diploma should be agreed with the diploma supervisor.	CES
dr inż. Rafał Ostromecki	Design of the ribbed-shell covered building (ie. concert hall, temple) Design of the ribbed-shell covered industrial bay Design of the ribbed silo for coal/wheat/cement/gravel storage Design of the ribbed water tower structure Design of the multichamber tank structure of rectangular projection Design of the multichamber bunker-silo structure for coal/gravel storage Design of the hoist tower structure Design of the ski jump structure Design of the industrial house located in the area of mining damages Design of the bus/train station building/canopy Design of reinforced concrete high-rise building	Subjects refer to ribbed-shell structure objects, municipal/ industrial/storage buildings. The detailed work scope to be agreed with the supervisor	CES

dr inż. Marek Urbański	<p>Design of a reinforced concrete structure for a high-rise building with a slab-and-column structure</p> <p>Design of a multi-story building with a slab-and-column structure with FRP composite reinforcement</p> <p>Design of a reinforced concrete industrial chimney with multiple flues</p> <p>Design of a multi-tube industrial chimney using FRP composite reinforcement</p> <p>Design of a reinforced concrete water tank with a dome roof, with steel and/or composite reinforcement</p> <p>Mechanical properties of FRP bars at elevated temperatures</p> <p>Design of a reinforced concrete industrial chimney over 100 m high</p> <p>Design of an industrial chimney over 100 m high with FRP composite reinforcement</p> <p>Comparative analysis of three types of reinforced concrete chimneys with a height of 200 m</p> <p>Design of a reinforced concrete cooling tower with a height of 200 m</p> <p>Design of a cooling tower with FRP composite reinforcement</p> <p>Testing the bond properties of composite reinforcement in terms of applications in engineering structures</p> <p>Increasing the load-bearing capacity of structural elements through concrete modification and the use of FRP composite reinforcement</p> <p>Design of a prestressed reinforced concrete girder with a span exceeding 30 m</p> <p>Design of a prestressed hall girder with a span exceeding 30 m using FRP composite reinforcement</p>	<p>The topic and detailed scope of diploma should be agreed with the diploma supervisor.</p> <p>It is possible to agree on an individual thesis topic with the supervisor.</p>	CES
dr inż. Kostiantyn Protchenko	<p>Improving the Structural Performance of Reinforced Concrete with External FRP Laminates, Mechanical Behavior of FRP Composites (Plies, Laminae, Laminates, Tapes, etc.)</p> <p>Design Frameworks for Strengthening Structures with Composite Reinforced Mortar (CRM) Systems</p> <p>Design and Implementation of FRP Bars as Internal Reinforcement for Reinforced Concrete Structures</p> <p>Fire Resistance of Structural Elements Reinforced or Strengthened with FRP Composites</p> <p>Durability of FRP Bars and the Influence of Nano-Additives on the Strength Capacity of FRP Reinforcement</p> <p>Design of Selected Elements for Precast Industrial Projects</p> <p>Design of Residential and Industrial Projects Using Typical Precast Elements Such as Filigree Slabs, HC and HCU Slabs, TT Slabs, Solid Decks, One-Layer Solid Walls, Double Walls, Thermal Walls, and Sandwich Walls</p> <p>Implementation of BIM in Structural Design for Automation of Reinforcement Elements in Monolithic</p>	<p>The topic and detailed scope of diploma should be agreed with the diploma supervisor.</p>	CES
dr inż. Marta Lutomirska	<p>Strut-and-tie models in design of reinforced concrete structures (deep beam, corbels, half joints, etc.)</p> <p>Effect of confinement in reinforced concrete columns</p> <p>Selected design problems to new generation of Eurocodes</p> <p>Reliability of reinforced concrete structures</p> <p>Rheological phenomenas in structures made of recycled concrete aggregates</p>	<p>The topic and detailed scope of diploma should be agreed with the diploma supervisor.</p>	CES