Załącznik nr … do Uchwały nr …….2025
Rady Naukowej Wydziału ……..
Politechniki Białostockiej z dnia ……. 2025

Topics and scope of doctoral dissertations in
in the academic year 2025/2026

Lp.	Name and surname	Topic	Scope of doctoral dissertations	telephone number	e-mail
1.	Dr hab. inż. Janusz Krentowski, prof. PB	BIM (Building information modeling) implementation model in small and medium-sized construction enterprises in the aspect of diverse construction solutions	1. Review of IT solutions and BIM implementation models in the SME sector. 2. Analysis of limitations to BIM implementation in the SME sector. 3. Identification of factors facilitating BIM implementation in the SME sector. 4. Development of a theoretical model of BIM implementation in SME enterprises, taking into account various design solutions. 5. Verification of the model on the example of a selected enterprise. 6. Development of conclusions regarding the possibility of adapting the proposed model solutions in industrial practice.	602361917	j.krentowski@pb.edu.pl
2.	dr hab.inż. Barbara Sadowska-Buraczewska	Three-layer floor slabs with reinforced concrete facings and a core made of lightweight insulating material – concept, calculations and experimental verification	a. Purpose of the topic b. Requirements and conditions for floor slabs c. Description of the most commonly used floor slabs in practice – a review of the literature in this field d. Three-layer Hoff model slabs – description of the structure, dependencies, current state of knowledge 5. Review of possible materials for the production of facings and cores of Hoff model slabs intended for floor slabs 6. Construction and parameters of three-layer slabs accepted for further analysis – facings, core, dimensions, static scheme 7. Laboratory tests of lining and core materials; determination of E, Gw, λ 8. Numerical FEM calculations (static-strength) for the plate model intended for experimental tests 9. Production of plates intended for experimental tests 10. Experimental tests (deflections, scratching, crack width, breaking load) 11. Analysis of the obtained experimental test results and their comparison with the results of numerical calculations 12. Summary	85 7469600	barbara.sadowska@pb.edu.pl

Lp.	Name and surname	Topic	Scope of doctoral dissertations	telephone number	e-mail
3.	dr hab.inż. Robert Ziółkowski	The impact of limited visibility on the efficiency and safety of pedestrian traffic	1. Comprehensive analysis of road traffic safety conditions, with particular emphasis on vulnerable road users. 2. Identification of key factors negatively effecting pedestrian safety in the vicinity of road intersections and pedestrian crossings. Assessment of the impact of road infrastructure characteristics, traffic organization, and limited visibility on pedestrian and vehicular traffic behavior near intersections and pedestrian crossings. 3. Selection of research sites. Execution of field research involving the measurement and characterization of pedestrian and vehicular speeds under diverse infrastructural and traffic conditions. 4. Observation and analysis of driver and pedestrian behavior in scenarios incorporating visibility-enhancing interventions. 5. Risk modeling in the context of limited visibility. Development of predictive models aimed at evaluating traffic efficiency and safety. Preparation of recommended design solution guidelines.		robert.ziolkowski@pb.edu.pl
4.	Edyta Pawluczuk, DSc, PhD, Eng.	Carbon sequestration in cement composites with recycled concrete aggregate	1. Review of literature on the subject of the work 2. Defining variables and planning the research experiment 3. Execution physical and mechanical tests of cement composites 4. Execution microstructure tests (porosimetry, thermogravimetry, XRD, spectroscopy, SEM) 5. Assessment of the carbon footprint of a cement composite with recycled aggregate 6. Statistical analysis of the obtained research results 7. Development of practical recommendations/guidelines 8. Summary, conclusions and directions for further research.	696945904	e.pawluczuk@pb.edu.pl