

Doc. dr inż. Jacek Alenowicz

TEMATY DYPLOMÓW 2017/18

STUDIA STACJONARNE MAGISTERSKIE II STOPNIA

Wydział Inżynierii Lądowej i Środowiska
Kierunek: Civil Engineering

L.p.	SUBJECT	SCOPE	STUDENT
1.	Design and properties of asphalt mixes with RAP content. <i>(for one person)</i>	The subject concerns use of Recycled Asphalt Pavement (RAP) in the production of new hot asphalt mixes. Review of the methods used to design a mixture containing RAP which has properties not worse than a mixture produced with use of new aggregate and bitumen. RAP assessment – bitumen and aggregate properties. Influence of RAP content and quality on design of a mix and its properties. Limitations of RAP use. Research on high RAP content mixtures. Conclusions.	
2.	Geosynthetics in improved subgrade and subbase layers of road pavements. <i>(for one person)</i>	The subject concerns the use of geosynthetics as strengthening, separation and filtration layers in road pavements. Evaluation of subgrade and its bearing capacity and drainage. Improvement offered by geosynthetics. Methods of improvement evaluation and required properties of geosynthetics. Calculations of selected cases of subgrade and subbase layers without and with geosynthetics. Analysis and conclusions.	
3.	Solutions and technologies supporting sustainable development in road construction. <i>(for one person)</i>	The subject concerns the “green” solutions and technologies used in road construction. Definition of sustainable development – connection to road construction. The most important examples of sustainable development implementation in road construction - recycling of pavement materials, sustainable drainage systems, use of geosynthetics, use of by-products and waste materials. Evaluation of profits offered to the environment. Conclusions.	

Dr inż. Piotr Jaskuła

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L.p.	SUBJECT	SCOPE	STUDENT
1.	Fiber reinforced asphalt mixtures <i>(one person)</i>	Type of monography. The literature showed that the fibers improved the mixture's performance in several unique ways against the anticipated major pavement distresses: Permanent deformation, fatigue cracking, and thermal cracking. Some of the fibers allow to reduce the thickness of pavement structure. Analysis and conclusions.	
2.	Interlayer bonding tests under cyclic load <i>(one person)</i>	Type of monography. The subject concerns the use of cyclic load in interlayer bonding test of asphalt layers. Review of the developed methods and conditions (temperature, size of sample, compaction, frequency of cycle, time of load and rest etc.) of the test with cyclic load. The type of evaluation and assessment of the materials and results should be also compared. Analysis and conclusions.	
3.	Resistance of asphalt concrete to moisture induced damage assess by MIST test <i>(one person)</i> Sub supervisor: Cezary Szydłowski, Msc. Eng	Type of laboratory work. Review of literature of moisture susceptibility test and mechanism of damage of asphalt mixture due to moisture action. Preparing the laboratory experiment of moisture susceptibility test comparing the AASHTO T283 and MIST. There will be tested one mixture with two types of bitumen. Analysis of the result and conclusion.	

Dr inż. Marcin Stienss

TEMATY DYPLOMÓW '2017/18

STUDIA II STOPNIE, MAGISTERSKIE

Wydział Inżynierii Lądowej i Środowiska

Kierunek: Civil Engineering

L.p.	TEMAT	ZAKRES TEMATU	STUDENT (CI) WYBIE- RAJĄCY TEMAT
1.	Block pavement design methods (for one person)	The subject concerns different ways of block pavement designing and construction process. Review of the methods used to design pavement structures made of concrete blocks. Evaluation of different materials used as a base courses and bedding layers. Expansion and construction joints in block pavements. Calculations of several block pavement structures for certain traffic and subgrade conditions. Conclusions.	
2.	Pavement structures for low-volume roads (for one person)	The subject concerns pavement structures for low-volume roads, i.e. roads in rural or forest areas. Review of base courses (unbound, bound with hydraulic binders, foamed asphalt) and wearing courses (unbound layers, surface dressing, thin asphalt concrete) used for such roads. Maintenance technologies. Calculations of low-volume pavement structures for certain traffic and subgrade conditions with the selection of the most cost-effective solution. Conclusions.	
3.	Warm Mix Asphalt Technologies (for one person)	The subject concerns warm mix asphalt technologies that allow to produce and place asphalt mixtures in lower temperatures than before. Review of existing WMA technologies (additives, foaming techniques). Asphalt mixture design methods that include WMA techniques. Environmental advantages. WMA increase in recent years. Conclusions.	