The course is aimed at obtaining theoretical knowledge on the behavior of structural concrete and practical skills in the methods of design the reinforced concrete and masonry structures as well as applications of the various types of structural members and systems, including slabs, beams, columns, walls and the integration all the elements into building systems.

Sopilniak Artem

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ACADEMIC BACKGROUND

Prydniprovska State Academy of Civil Engineering and Architecture (PSACEA), Dnipro
Ph.D. thesis on strength and cracking-resistance of three-layer reinforced concrete wall panels. – Manuscript. 2016.
Thesis for a Candidate (Ph.D). Degree in Technical Studies. Programme 05.23.01 – The Building Designs, Buildings and Constructions.

PhD STUDENT of Reinforce-Concrete and Masonry Constructions 2008-2011

Prydniprovska State Academy of Civil Engineering and Architecture, Dnipro
Theme of research: Strength and crack resistance of three-layer reinforced concrete wall panels

MASTER IN METAL, PLASTIC AND WOODEN STRUCTURES 2007-2008

Prydniprovska State Academy of Civil Engineering and Architecture, Dnipro
Theme of final thesis: Analysis of rod structures in the elastic stage of operation based on the material utilization factor

BACHELOR IN METAL, PLASTIC AND WOODEN STRUCTURES 2003-2006

Prydniprovska State Academy of Civil Engineering and Architecture, Dnipro

WORK EXPERIENCE

HEAD OF DEPARTMENT OF DESCRIPTIVE GEOMETRY AND GRAPHICS 2019-present

Prydniprovska State Academy of Civil Engineering and Architecture

Associate Professor 2019-present

Department of descriptive geometry and graphics, PSACEA, Dnipro
Teaching: Computer-aided design systems, basics of BIM technologies, computer graphics in the AutoCAD environment, descriptive geometry and computer graphics

Associate Professor 2017-2019

Department of reinforced concrete and masonry structures, PSACEA, Dnipro

Teaching: reinforced concrete structures, metrology, standardization and certification, diagnostics and strengthening of reinforced concrete structures, automated design systems.

Assistant Professor **2009 -2017**

Department of reinforced concrete and masonry structures, PSACEA, Dnipro
Teaching: reinforced concrete structures, metrology, standardization and certification, diagnostics and strengthening of reinforced concrete structures, automated design systems.

Junior researcher of the scientific research department **Aug. — Nov. 2008**

Department of reinforced concrete and masonry structures, PSACEA, Dnipro
Duties: development of projects to strengthen structures of buildings and structures, development of projects of buildings and structures of new construction.

PROFESSIONAL EXPERTISE:

A licensed professional engineer with over 10 years of experience in the building information modeling (BIM) field.

Proven ability to lead and manage teams of engineers and architects to deliver high-quality 3D models and construction documents.

Rational design of building structures, taking into account the criteria of sustainable development, design of energy efficient buildings,

BIM and Artificial Intelligence approaches in energy efficient building design, sustainable design with BIM, environmental impact and architecture.

SCIENTIFIC EXPERIENCE

RESEARCH INTERESTS:

Strength and crack resistance of three-layer reinforced concrete wall panels
BIM and Artificial Intelligence approaches in energy efficient building design
Sustainable design with BIM
Environmental impact and architecture
Energy efficiency of life
Panel house building
BIM technologies
Computer modeling

PUBLICATIONS:

Author of more than 57 scientific works including 1 monograph and 39 scientific papers published in Ukraine and abroad including:

1. The usage of smart materials for skin-diagnostics of building structures while their monitoring / Sopilniak A.M., Bolshakov V.I., Vaganov V.E., Bier Th.A., Bausk Ie.A., Matiushenko I.M., Ozhyshchenko O.A., Popov M.Y. // Modern Building Materials, Structures and Techniques. Procedia Engineering 172 (2017). Vilnius, Lithuania. Pages 119-126**. (Scopus) - https://www.sciencedirect.com/science/article/pii/S1877705817305398**

2. Simple methods of increasing the energy efficiency of windows in the reconstruction of old buildings / Sopilniak A., Nikiforova T., Radkevych A., Shevchenko T. // Sustainable housing and human settlement: **Monograp.** Dnipro - Bratislava: SHEE “Prydniprovska State Academy of Civil Engineering and

Architecture" - Slovak University of Technology in Bratislava, 2018. Pages 94-101. - **http://eadnurt.diit.edu.ua/handle/123456789/10581**

3. BIM energy analysis of a house with double windows / Sopilniak A., Kolokhov V., Yarova T. Sereda S., Sirenok K., Dunda V // Ukrainian Journal of Civil Engineering and Architecture. – Dnipro.: PSACEA, 2021. – № 3. – P. 107-115 (in the Ukrainian language). –: **http://uajcea.pgasa.dp.ua/article/view/239180/237670**

4. The value of a rational roof overhang over a stained-glass facade using BIM technologies / Sopilniak A., Tytiuk A., Yarova T. Sereda S., Vershkova J. // Ukrainian Journal of Civil Engineering and Architecture. – Dnipro.: PSACEA, 2022. – № 2. – C. 102-109 (in the Ukrainian language). – : **http://uajcea.pgasa.dp.ua/article/view/261171**

5. BIM technologies in the PSACEA's educational process / Sopilniak A., Tytiuk A. // Abstracts of reports All-Ukrainian Scientific and Practical Forum «We will win - we will rebuild!», June 29-30, Dnipro.: PSACEA. 2022. P. 93-95 (in the Ukrainian language). – **http://srd.pgasa.dp.ua:8080/xmlui/handle/123456789/8779**

6. Time measurement of ultrasonic vibrations extension in concrete of different compositions / Sopilniak A., Kolokhov V., Savytskyi M., Gasii G. // International Conference Building Innovations. ICBI 2019: Proceedings of the 2nd International Conference on Building Innovations. Vol 73. Springer, Cham. 2020. Pages 95-102**. (Scopus) - https://link.springer.com/chapter/10.1007/978-3-030-42939-3_11**

7. The value of a rational roof overhang over a stained-glass facade using BIM technologies / Sopilniak A., Tytiuk A., Yarova T. Sereda S., Vershkova J. // Ukrainian Journal of Civil Engineering and Architecture. – Dnipro.: PSACEA, 2022. – № 2. – C. 102-109 (in the Ukrainian language). – **http://uajcea.pgasa.dp.ua/article/view/261171**

8. The newest technologies for solar buildings using BIM / Sopilniak A., Tytiuk A., Yarova T. Sereda S., Vershkova J. // Ukrainian Journal of Civil Engineering and Architecture. – Dnipro.: PSACEA, 2022. – № 3. – P. 95-101 (in the Ukrainian language). – **http://uajcea.pgasa.dp.ua/article/view/264074**

LINGUISTIC COMPETENCIES

- Ukrainian (native speaker)
- Russian (native speaker)
- English (advanced)

OTHER

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