

Course description

Tempus project EcoBRU

Course name
4 Environmental aspects of design solutions in the field of transport construction

Lecturer	Educational institution
Course Director: Surovtseva O. Other team members: Sultanov N. N. Chernyaeva V. A.	PSTU

Deficit definition
Relevance of the environmental knowledges due to aggravation interrelation between society and nature be embodied in at all known sciences and school disciplines.

Required space in the training	Course level	Course type
Advanced training		MOODLE

Target group	Duration	Languages
For teachers of technical schools, colleges (and for university teachers)	72	Russian

Conditions	
Conditions: Internet	Other requirements (if applicable) -

Ladder Points (1 un.=36 h)	Total hours	MOODLE	Independent work (h)
2	72	54	18

Topicality for EcoBRU
General environmental education. Special vocational scientific education. The specific link with the professional activity.

Themes / Content	MOODLE	Hours and tasks for independent work
Environmental aspects of construction & design of transport facilities <ul style="list-style-type: none"> - Environmental problems connected with the operation and construction of transport facilities - EIA and EIA place in the design process - Development of the project section "Measures for the Protection of the Environment" - Engineering and environmental surveys for construction. Their structure and content. - Ecological and economic aspects of industrial enterprises management 	18	6

Themes / Content	MOODLE	Hours and tasks for independent work
Ecological justification of design solutions in the field of transport planning <ul style="list-style-type: none"> - Evaluation of the transport impact on the environment in transport planning - The role and place of environmental factors in the methodology of transport planning. - Increasing the efficient use of different means of public transport to reduce the negative impact on the environment. - Normative legal documents regulating the procedure of transport planning and requirements for transport within urban planning. - Determination of the effective use of various modes of transport, taking into account environmental factors. - Increasing the efficient use of different means of public transport to reduce the negative impact on the environment. 	18	6
Elimination of the negative impact of urban transport on the environment <ul style="list-style-type: none"> - Analysis of possible options for public transport: their advantages and disadvantages. - Documents regulating the negative impact on the environment (regulations of the Russian Federation and foreign ones) - Analysis of ways to reduce the negative impact of urban transport on ecosystems used in Russia and abroad - Constructive solutions in the field of urban transport infrastructure to reduce the negative impact on the environment - The procedure of conducting experimental studies on the impact of transport on the environment 	18	6
	54	18
TOTAL		72

Forms of control and assessment			
Control form	Percentage ratio	Dates	Criteria of assessment
Test`s question (MOODLE)	30	within the framework of learning course	more than 59 %
Lecture on-line (MOODLE)	20		more than 59 %
Abstract	20		Conciseness, consistency, design, literacy
Credit	30		"Credit"- student shows good knowledge of educational material on the topics of the course. While logical and consistent presented material, reveals the meaning of the question, gives the right answers to additional questions. «Fail» - listener is difficult respond to questions raised, give partial answers to the questions from the basic literature recommended for the course.

Terms and conditions of access to monitoring and assessment of knowledge (exam)

Test`s question (MOODLE) & Lecture on-line (MOODLE) more than 59 % + Abstract

Document type certifying the successful course visiting (Certificate?)

certificate

Organizational guidelines

Place: www.pgups-tempus.ru

Example: <http://www.pgups-tempus.ru/course/view.php?id=155>

The recommended number of participants: no regulate

Literature and educational materials

Author	Year of publishing	Title	Pages number	Place of publication, publisher or an online link
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Basic literature

1. Russian Federation. Government decree. On the composition of project documentation sections and requirements to their content [Text]: government decree: [adopted 16.02.2008 № 87]. - M.: "Rossiyskaya Gazeta" dated February 27, 2008 N 41, in the assembly of the legislation of the Russian Federation dated February 25, 2008 N 8, article 744.
2. Set of rules -11-102-97 "Engineering and environmental surveys for construction"
3. Round table "Environmental education - the key to the future" Collection of participants' materials./ Edited by Smolev B. V., Melnik A. A. – St. Petersburg: Christmas+, 2012
4. Schmal, A. G. Environmental hazards & environmental risks. Publisher: MP "ICC BNTV, 2010, Bronnitsy, p. 191
5. Vukan R. Vuchic. Transportation for Livable Cities. Translation: Alexander Kalinin. Edited by: Mikhail Blinkin. - Publishing house: The territory of the future. Series: University library named after Alexander Pogorelsky, 2011. – 576 p.
6. SP 42.13330.2011 Urban development. Planning and development of urban and rural settlements.
7. Order 244 Methodological recommendations on development of draft master plans of settlements and urban districts.
8. Urban development code of the Russian Federation (UDC RF) from December 29, 2004 № 190 - FL
9. Transport Strategy of the Russian Federation for the period till 2030
10. Federal law of the Russian Federation dated November, 8 2007 No. 259-FL "Statute of road transport and urban land-electric transport"
11. Federal law dated 10.01.2002 № 7-FZ (edition dated 24.11.2014, with changes from 29.12.2014) "On environmental protection" (with changes and amendments, which came into force from 01.01.2015) (10 January 2002)
12. Federal law of November 23, 1995 N 174-FL (version effective March 31, 2015) "On ecological expertise" (as amended on February 12, 2015)
13. "Urban rail transport: innovative technologies." Paraskevopulo Y. G., Ilyin A. A., Kulinich N. V., scientific, industrial and technical journal "Road and track facilities" 5.2013/Ministry of Railways of Russia, RITOZH. M. - Transzheldorizdat.
14. GOST R ISO 14837-1-2007 "Noise and vibration caused by the movement of the rail transport"
15. Urban rail transport: innovative design of the tram way on a selected track. Transport of the Russian Federation №4 (47), 2013, p. 51-53. Doudkin E. P., Sultanov N. N., Paraskevopulo G. Y., Paraskevopulo Y. G.
16. Agadzhanian N. A., Makarova I. I. Magnetic field of the Earth and the human body // Human ecology. - 2005. - № 9. - p. 3-9
17. SP 98.13330.2012 "Tram and trolleybus lines"
18. SNIP 2.05.03-84 * "Bridges and pipes"
19. SNIP 9128-2009 "Asphalt concrete road aerodrome mixtures and asphalt concrete. Technical conditions"
20. GOST R ISO 14837-1-2007 "Noise and vibration caused by the movement of the rail transport"
21. "Laboratory tests on the construction of tram tracks on cyclic loads" Benin A. V., Dudkin E. P., Paraskevopulo Y. G., Sultanov N. N. Transport of The Russian Federation . 2014. № 4(53). p. 28-30

Additional resources

1. Ecological justification of design solutions [Text] / Svintsov E. S., Surovtseva O. B., Tishkina M. V. - Moscow: publishing house UMC ZHDT (Route), 2006
2. Safronov, E. A. Transport systems of cities and regions. Publishing house of the Association of construction universities. M, 2005. – 266 p.
3. Integrated transport system: Manual for higher schools / V. G. Galaburda, V. A. Persianov, A. A. Timoshin,

- etc.; Edited by V. G. Galaburda, 2nd edition with changes and additions - M.: Transport, 2001. – 303 p.
4. Oveshnikov E. V., Fishelson M. S., "Urban transport"
 5. "Urban transport" Yudin V. A., Samoilov D. S.
 6. "New transport systems in urban public transport" D. Hebarda translation from Slovak Ph. D. Cosmina V. V.
 7. Abstracts of the conference "Technosphere and environmental safety on transport» IV International scientific-practical conference on October 22-24 2014. in FSBEI HPO of PSTU of Emperor Alexander I
 8. Ecological safety of transport flows. / Edited by A. B. Djakov. – M.: Transport, 1989.
 9. Ecoculture. In search of a way out of the ecological crisis. / Edited by N. N. Marfenin. – M.: MNEPU, 1998.
 10. Konstantinov V. M. Ecological bases of nature management. - M., 2001.
 11. "Urban electric transport: Trolleybus" Textbook for primary professional Education. Maksimov A. N. Publishing center "Academy" 2004.
 12. Technical Reference for tram track master - Nizhni Novgorod: Publishing house "Litera", 2002.
 13. Kuzmichev V. E., Chernova G. V. Experimental program of the special course for biological universities "Electromagnetic biology // Electromagnetic radiation in biology (BIO-AMY-2005): III International Conference Kaluga, 5-7 Oct. 2005 - Kaluga, 2005.
 14. Guidelines on environmental impact assessment in design, construction, reconstruction and maintenance of roads. The ministry of Transport of the Russian Federation (ROSAVTODOR). Ordinance 22.11.200. № OS-482-P. Moscow

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