

DETAILED MODULE DESCRIPTION

Module Title: Construction materials for the stable built environment			University module code	
Level: BSc	Credit value	ECTS Value: 3 (in the Republic of Belarus 1 credit corresponds to 36 academic hours)	Length (in Semesters): 1	Semester(s) in which to be offered: 5 (6)
New module	Title of Module being replaced (if any):			With effect from:
Originating School:: Yanka Kupala State University of Grodno		Module Co-ordinator(s):: Yanka Kupala State University of Grodno		
Programme(s) in which to be offered: Industrial and Civil Construction				
Pre-requisites (between levels): Chemistry, Architecture.			Co-requisites (within a level): Construction Materials Science	
Indicative learning hours: 108		Percentage taught by School(s) other than originating School (%)		
<p>Aims of Module:</p> <ul style="list-style-type: none"> • Acquiring of <i>firm knowledge</i> in Construction Materials Science; acquaintance with <i>terms and definitions</i> in the field of Construction Materials Science; • Study of the stable built environment objects and essential materials properties of the materials, used in this environment; • Shaping students' knowledge of the materials, essential for the stable built environment; • Study of the secondary products of Industrial facilities for their implementation in construction materials production; • Study of the used construction materials properties and determining of the possibility of their recirculation in repairs, reconstructions, renewal of buildings and constructions; • To shape students' in-depth understanding of the essence of stable built environment ecologization; <p>For the achieving of the mentioned goals the following is essential:</p> <ul style="list-style-type: none"> - study of <i>theories</i> and <i>opinions</i> in the field of Construction Materials Science, implementation of the secondary products of Industrial facilities, recirculation of materials; - study of <i>standard technical</i> documents; - acquaintance with <i>methods</i> of materials testing and getting practical skills of physical-chemical, technological and operational properties of the materials for various applications; <p>The course is supposed to be learned through the self-study by the students of lectures materials and given information sources, independent problems solving, group discussions via Internet / Scype.</p>				
<p>Intended Learning Outcomes:</p> <p><u>Knowledge and understanding</u></p> <p>On successful completion of this module, a student will be able to:</p> <ul style="list-style-type: none"> - explain and apply <i>terms, definitions, theories</i> and <i>opinions</i> in the field of efficient Construction Materials Science; - be in touch with <i>methods</i> and <i>methodology</i> of construction materials testing; - be able to use techniques and practical skills of making choice of efficient construction 				

materials;
 - apply theoretical knowledge for the practical problems solving.

Transferable/Key Skills and other attributes

On completion of the module a student will have the opportunity to:

- define the needed properties of construction materials;
- choose and apply the most efficient construction materials for the given conditions of stable built environment;
- research, reveal and remove the causes of materials properties decay and their regeneration in the process of reconstruction and restoration;
- study the possibility of construction materials recirculation;
- participate in group *discussions* and *presentations* via Internet;
- apply *computer training systems*;
- exercise *initiative* and bear *personal responsibility*.

Module mark calculation:

Assessment components (in chronological order of submission/examination date)				
Type of assessment ⁱ	Weighting%	Duration (if exam)	Word count (if essay/dissertation):	Component pass required ⁱⁱ
Assessment of the degree of interaction and participation of the students (50% mark attributed to soft skills)	40%	2 hours	Testing	yes x no
Final assessment component Written Group Essay	60%	2 hours	20 assignments	Yes no x

Learning and teaching strategies

The basis of the module is comprised by lecture materials and teachers' assignments, deposited on the Educational Portal of Yanka Kupala State University of Grodno. The module's materials include interactive assignments for interim knowledge evaluation both by a teacher and by a student (self-evaluation).

Major reading matter, available in the libraries, is proposed as well as links to additional Internet sources, including databases, such as ScienceDirect, Scopus, electronic libraries etc.

The instruction is realized through delivery of in-class lectures, practical classes, laboratory practices or via the Internet. For creating the possibility of feedback students are to be invited for participation in on-line discussions, reciprocal evaluation and group working (participation in forum is compulsory).

The final mark is generated with the regard to rating-accumulative system, which presupposes evaluation of students' knowledge and skills during the semester and at the final exam.

All the students are supposed to use the virtual media of the Educational Portal in the process of

learning. The programmes are based on the strategy of electronic learning for the data transfer. The method is based on the following principles:

1. High quality integrated module content that combines a variety of types of information supporting the learning objectives of the module
2. Internet-based communication and submission of assessed work
3. On-line tutorial support during module delivery

Syllabus outline:

- Introduction: study of construction materials, used in stable built environment creation, their application and main properties, application field and ecological aspects of application;
- Secondary industrial products application for production of construction materials of stable built environment;
- Construction materials recirculation in repairs, reconstructions: defining of physical and mechanical properties, defining of fields of application.

Indicative texts and/or other learning materials/resources:

Core text:

1. Новые материалы. Колл. авторов. Под научной редакцией Ю.С. Карабасова. –М: МИСИС – 2002 – 736 с.
2. Строительные материалы. Учеб.-метод. комплекс для студ. строит. спец. дневной формы обучения. В 2-х ч. Ч. 1. / Ю.И. Киреева, О.В. Лазаренко. – Новополюцк: ПГУ, 2004. – 376 с.
3. Рыбьев И.А. Строительное материаловедение. – М.: Высш. шк., 2003. – 700 с.
4. Урецкая Е.А., Батяновский Э.И. Сухие строительные смеси: Материалы и технологии. – Мн.: Стринко, 2001. – 182 с.
5. Юхневский П.И. Строительные материалы и изделия: Учеб. пособие / П.И. Юхневский, Г.Т. Широкий. – Мн.: УП «Технопринт», 2004. – 476 с.: ил.

Recommended text:

1. Применение ячеистобетонных изделий. Теория и практика. / С.Л. Галкин [и др.], Стринко, Мн.: 2006. – 448 с.
2. Панасюк М.В. Кровельные материалы. Практическое руководство. Характеристики и технологии монтажа новейших гидроизоляционных, теплоизоляционных, пароизоляционных материалов / М.В. Панасюк – Ростов н/Д: Феникс, 2005. – 448 с. – с ил. (Строительство).

Journals:

6. Архитектура и строительство.
7. Строительная наука и техника.
8. Проблемы современного бетона и железобетона.
9. Вестник Брестского государственного технического университета.
10. Вестник Полоцкого государственного университета.

On-line resources:

www.grsu.by
www.fbt.grsu.by
www.dwg.ru

Date of completion of this version of Module Specification

Date of approval by the Faculty Programme Approval and Review Subcommittee:

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- i* please indicate, in chronological order of submission date, each assessment component by type, e.g. examination, oral, coursework, project, dissertation
- ii* indicate Yes to specify the assessment component(s) to be passed in order to pass the module