

MINISTRY OF EDUCATION AND SCIENCE
REPUBLIC OF KAZAKHSTAN



«APPROVED»

Kozykova N.V.

Full name

signature of the head of the department

«07» 08 2020 г.

SILLABUS

Construction Materials

(discipline name)

for the educational program 5B073000 - "Construction and production of building materials, products and structures"

3 credit (1/1/1)

Semester: 1 2020-2021 academic year

Almaty, 2020

Institute of Architecture and Construction. T.K. Basenova

Department of Construction and Building Materials

1. Information about the teacher: Lecturer

(Akmalaiuly K.)

Office hours, office _09: 00-17: 00, office 109 MUK_

Email k.akmalaiuly@satbayev.university

1. Teacher information:

Kenzhebek Akmalaiuly, professor
(Teacher's name, position)

Training format - 100% online.
(leave as needed)

Login: Microsoft Teams
office: 104

(office) Office hours: 09:00 - 17:00
whatsapp +7(701)759-8154 FB, VK, Telegram, Instagram

e-mail: k.akmalaiuly@satbayev.university

Course requirements:

- Presence of desktop or laptop computer, simultaneous use of other gadgets is recommended, but not required.
- Speed of at least 0.5 Mbps. availability of an Internet channel.
- Having a personal account and corporate mail with a picture of the teacher on the Microsoft 365 platform.
- Attendance is required in accordance with the schedule.

2 Course description:

2.1 Course for students of BBB specialty 5B073000 - "Manufacture of building materials, products and structures"

The course provides students with a general idea of the principle of preparation of building materials, training in the application of the internal structure of materials, its construction technical properties, effective in construction, ie functional properties, in order to be able to learn and be professional. The main task of teaching the discipline is to train specialists working in the construction industry, in particular in the production of building materials.

2.2 The final stage of the course is an exam.

Upon completion of the course, the student must be able to analyze the topics covered and demonstrate design skills, as well as be able to calculate costs.

2.3 Student: Represented from a functional, economic and environmental point of view in the field of modern technology of production of construction materials and their use in construction. Introduces the technology of construction materials made in different ways on the basis of natural and man-made waste. Must be fully aware of the hardening processes, properties and applications of building materials.

2.4 Upon completion of the course, the student must know how to use building materials and the basics of the choice of materials and products in the control of design decisions and proposals

during the work in the field of construction.

3. Calendar - thematic plan:

A week	Lecture topic	Practical work topic	Link for literature	The task	Deadline
1	Introduction. Relationship between properties, structure and composition of materials	Building material properties	Basic 1. Further reading 4	Examine the properties of building materials	24.08-30.08.2020
2	The use of rocks for the production of materials from natural stone	Types of rocks	Basic 1. Further reading 1	Exploring the types of rocks	31.08-06.09.2020
3	Ceramic materials. Materials derived from mineral raw materials	Raw materials for ceramic materials	Basic 2. Further reading 3	What are the types of ceramic materials	07.09-13.09.2020
4	Basic materials of mineral alloys	Types of mineral binders	Basic 4. Further reading 3	What are the types of mineral binders	14.09-20.09.2020
5	Metallic materials	Metallic materials	Basic 1. Further reading 2	Composition of metallic materials	21.09-27.09.2020
6	Inorganic binders. Air binders.	Types of inorganic binders	Basic 3. Further reading 3	What are inorganic binders?	28.09-04.10.2020
7	Concretes based on inorganic binders	Types of concrete by the composition of inorganic binders	Basic 1. Further reading 2	Concretes based on inorganic binders	05.10-11.10.2020
8	First interim certification			Multivariate test	12.10-18.10.2020
9	Lightweight concrete and mortars	Types of lightweight concrete	Basic 2. Further reading 2	What types of lightweight concrete are there?	19.10-25.10.2020
10	Silicate and asbestos materials	Types of silicate and asbestos materials	Basic 4. Further reading 4	Silicate and asbestos materials	26.10-01.11.2020
11	Organic building material	Organic materials	Basic 4. Further reading 4	Raw organic materials	02.11-08.11.2020
12	Polymer materials	Polymer materials	Basic 2.	Composition of	09.11-

A week	Lecture topic	Practical work topic	Link for literature	The task	Deadline
			Further reading 3	polymeric materials	15.11.2020
13	Building materials for special purposes. Waterproofing and adhesive materials	Special building materials	Basic 2. Further reading 4	Roofing, insulation materials	16.11-22.11.2020
14	Heat-insulating and sound-insulating materials	Heat-insulating and sound-insulating materials	Basic 4. Further reading 4	Types of heat-insulating and sound-insulating materials	23.11-29.11.2020
15	Second final certification			Multivariate test	30.11-06.12.2020
	Exam			Tickets	По расписанию

* The calendar-thematic calendar is subject to changes taking into account holidays

4. List of references:

Basic literature	Further reading
1. Строительные материалы : CD-ROM: электрон. учеб. для вузов / Л.А. Алимов, В. В. Воронин; Образов.-изд. центр "Академия-Медиа" РК. - М. : Акад., 2014. - 1 электрон. опт. диск (CD-ROM) : 7.34 МВ. - (Высш. проф. образование. Бакалавриат. Стр-во). - ISBN 978-5-7695-8336-0	1. Физико-химические основы технологии строительных материалов : учеб.-метод. пособие для студентов спец. 1-70 03 001 - "Автомоб. дороги" / Я.Н. Ковалев. - Минск; М. : Новое знание: Инфра-М, 2016. - 285 с. : ил. - (Высш. образование). - ISBN 978-985-475-493-2
2. Структурообразование в системах при производстве строительных материалов : учеб. пособие вузов / Л. Н. Попов, И. Б. Аликина, Б. А. Усов. - М. : ИНФРА-М, 2016. - 62 с. : ил. - (Высш. образование. Бакалавриат). - ISBN 978-5-16-010755-4	2. Технология производства неметаллических строительных изделий и конструкций : учеб. для сред. проф. образования / Л.А. Алимов, В.В. Воронин. - М. : ИНФРА-М, 2016. - 443 с. : ил. - (Сред. проф. образование). - ISBN 978-5-16-011061-5
3. Строительные материалы : лаборатор. практикум: учеб.-метод. пособие / Я. Н. Ковалев [и др.]; под ред. Я. Н. Ковалева. - Минск; М. : Новое знание: Инфра-М, 2016. - 633 с. : ил. - (Высш. образование. Бакалавриат). - ISBN 978-985-475-541-0	3. Бетон и бетонные конструкции / А. Г. Зоткин. - 2-е изд., перераб. и доп. - М. : АСВ, 2016. - 328 с. : ил. - ISBN 978-5-4223-0106-2
4. Основные свойства строительных материалов (1401000 "Строительство и эксплуатация зданий и сооружений") [Текст]	4. Строительные материалы и изделия : учеб. для сред. проф. образования / Ю.Г. Барабанщиков. - 6-е изд., стер. - М. :

: учеб. пособие / Г.Д. Кусаинова. - Астана : Фолиант, 2016. - 136 с. : ил. - (Проф. образование). - ISBN 978-601-302-460-8	Акад., 2015. - 416 с. : ил. - (Проф. образование. Стр-во и архитектура). - ISBN 978-5-4468-1990-4
--	---

5. Scope of competence

Learning descriptors	Scope of competence				
	Scientific and theoretical world танымдық	Socio-personal and civic	General engineering, professional	Intercultural and communicative	Specialized
Knowledge and understanding	30	10	30	10	30
Apply knowledge and understanding	20	10	30	10	30
Comment and action analysis	15	15	30	10	30
Communicative and creative abilities	10	20	30	10	30
Self-education and digital skills	20	10	30	10	30

6. Schedule of required works

#	Type of control	Of the week max. points	Week															Max score results
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	Activity in the discussion of lectures	10	24.08	31.08	07.09	14.09	21.09	28.09	05.10	12.10	19.10	26.10	02.11	09.11	16.11	23.11	30.11	10
2	Completion of tasks (TSIS)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
4	Perform practical tasks	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
6	1st intermediate control (Midterm)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	30
8	Student's independent work (ISW)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
9	2nd final control (Endterm)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	30
	Final exam *	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	40
	That's all	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100

* The final exam consists of four tasks of different levels, ie three simple tasks of 25 points and one complex task of 15 points.

7. The criteria for the evaluation of works:

Evaluation by alphabetic system	Digital equivalent of evaluation	Criterion
A	95 – 100	Correctness and completeness of answers, accuracy and accuracy of presentation of all issued tasks.
A -	90 – 94	correctness and completeness of answers, accuracy and accuracy of presentation with some comments
B +	85 – 89	incomplete presentation of answers, accuracy of presentation with some comments
B	80 – 84	Incomplete statement of answers with comments, accuracy of presentation with some comments.
B -	75 – 79	the statement of answers is not complete, not accurate presentation, some comments on the content, not all issues are set out in full
C +	70 – 74	a weak statement of the answers, not the accuracy of the presentation, some remarks, not all questions are set out in full
C	65 – 69	a weak statement of the answers, not the accuracy of the presentation, comments on the accuracy of the presentation
C -	60 – 64	a weak statement of the answers, not the accuracy of the presentation, comments on the accuracy of the presentation, some questions are not disclosed
D +	55 – 59	The answers do not correspond to the questions raised, there are remarks in the presentation,
D	50 – 54	The answers do not correspond to the questions raised, there are remarks in the presentation,
F	0 – 49	The answers do not correspond to the questions

Evaluation criteria

In addition to the test, each work is evaluated on 4 criteria:

- accuracy and precision (A) - 30% (how carefully and accurately the work is calculated)
- Creativity and creativity (T) - 30% (how and in what form the work is presented)
- completeness and maturity (H) - 40% (how deep, logical and structured the work is)
- specificity (O) - a special factor of 1.0; 0.5 or 0 is used.

Criteria	Very good (0.9-1.0)	Good (0.7-0.9)	Satisfactory (0.4-0.7)	Unsatisfactory (0-0.4)
Neatness and accuracy	30	20	10	<10
Creativity and creativity	30	20	10	<10
Completeness and maturity	40	30	20	10

Features	1,0	0,5	0
----------	-----	-----	---

The total score is calculated by the formula:

$$\text{Price} = (A + T + 3) \times O$$

Maximum assessment of knowledge by type of task

Tests and activities	10
Student's independent work (ISW)	10
Practical work and bonus	10
Laboratory work	10
1st intermediate control (Midterm)	10
Course project	
2nd final control (Endterm)	10
Final exam	40
That's all	100

8. Late submission policy:

The student must be prepared for lectures and practical classes. All types of work (practical and original) require full performance and timely protection. The student should not be late or absent from class, be responsible and careful. It is planned to reduce the maximum score by 10% for work not submitted on time. If, for some reason, you have to skip the midterm exam, you can give the teacher a chance to do so in advance. Missing the exam without a valid reason deprives you of the right to retake it. If you miss the exam for valid reasons, you will be given a special permission to retake the exam, and the date, time and place of the exam will be set.

9. Attendance policy:

The student must be punctual and punctual, responsible and careful. The student must be ready for lectures and practical classes. Timely submission of calculations for practical work, full performance of all types of work (practical and independent).

10. Academic discipline and ethics policy:

Respect other people's opinions, be patient. Express your opinion in the right way. Plagiarism and other forms of dishonest work are not allowed. It is not allowed to take exams, copy, manipulate other students. A student who falsifies any course information will receive an "F" grade.

Activity in lectures and practical classes depends on your final score. Many theoretical questions are included in the lecture materials and are read only in lectures. Therefore, skipping a lesson can affect your progress and your final grade. Missing or delaying twice before the end of a lesson for any reason is considered a missed lesson. However, just attending classes does not mean an increase in points. You need to be active in class. The mandatory requirement of the course is to be ready for each lesson. These sections of the textbook and additional materials should be reviewed not only in preparation for practical exercises, but also before attending the relevant lecture. Such training will make it easier for you to accept new material and will help you to actively acquire knowledge within the university. Corruption in any form is not allowed in the teaching of the discipline. The organizer of such events (teachers, students or third parties on their behalf) is fully liable for violation of the laws of the Republic of Kazakhstan.

Help: You can contact the teacher during working hours or around the clock by e-mail for advice on completing, submitting and defending independent work, as well as additional information about the material covered and all questions about the course.

During distance learning:

Mandatory distance learning in accordance with the schedule determines the readiness for this

lesson. In case of absenteeism, the student must notify the teacher around the clock and explain the plan of self-study.

- Mandatory reading of the materials presented before distance learning
- timely submission of tasks. There are fines of -10% for late submission
- 20% of absenteeism is equal to the grade "F (Fail)"
- Plagiarism and fraud are not allowed during the task
- Although the use of electronic gadgets in the classroom is allowed, their use during the exam is not allowed.
- Corruption in any form is not allowed in the teaching of the discipline. The organizer of such events (teachers, students or third parties on their behalf) is fully liable for violation of the laws of the Republic of Kazakhstan.

2020 August 07 №1 (name of the department) was approved by the minutes of the department meeting.

Compiler: Professor Акматаевич К.
 (position) (surname, name)

