MINISTRY OF EDUCATION AND SCIENCE
REPUBLIC OF KAZAKHSTAN

SATBAYEV UNIVERSITY

«APPROVED»

Kozykova N.V. _____
Full name signature of the head of the department
« 07» 08 2020 г.

SILLABUS

Concrete technology – II

For specialty
5B073000 « Production of building materials, products and structures »
3 credits

Semester: 7, 2020- 2021 academic year.

Almaty, 2020

MINISTRY OF EDUCATION AND SCIENCE REPUBLIC OF KAZAKHSTAN
SATBAYEV UNIVERSITY

Institute of Architecture and Construction
Department of Construction and Building Materials

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
whatsup +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 is a study of the structure of concrete, its construction technical properties, effective in construction, ie the use of functional properties in order to be able to get a general idea of the principle of concrete preparation, to acquire knowledge and skills in professional activities. The main task of teaching the discipline is to use the experience of training specialists working in the field of construction materials.
2.2 The final stage of the course is an exam.
Upon completion of the course, the student must demonstrate analytical and design skills on past topics, as well as be able to calculate costs.
2.3 Student: Basic knowledge and skills in the field of concrete technology, as well as technological principles of production of concrete materials, their application; nomenclature of concrete products and their properties; conditions for long-term environmental friendliness, economy and authenticity; know the methods of development trends in the production of applied concrete products.
2.4 Upon completion of the course: In this course the student can get acquainted with the modern technology of production of concrete materials and functional, economic and environmental perspectives in the field of construction. Must know the technology of concrete materials made in different ways on the basis of natural and man-made waste.

3. Calendar-thematic plan:

Week	Theme of the lecture	The theme of practical work	Reference on Literature	Task	Deadline
1	Introduction	Reinforced Concrete Product Requirements	Highlights 4 Additional 1	Prefabricated reinforced concrete structures and products	24.08-30.08.2020
2	Nomenclature of products and designs	Panels and blocks of external walls of industrial buildings	Highlights 1 Additional 1	List requirements for reinforced concrete products	31.08-06.09.2020
3	Products for industrial buildings	Large volumetric elements	Highlights 2 Additional 3	Products for exterior walls	07.09-13.09.2020
4	General principles of the organization of the technological process	Aggregate-flow method	Highlights 4 Additional 3	Sanitary volumetric elements	14.09-20.09.2020
5	Methods for the production of concrete and reinforced concrete products	Bench method for the production of reinforced concrete products	Highlights 1 Additional 2	Scheme aggregate-flow method	21.09-27.09.2020
6	Bench method for the production of reinforced concrete products	Enlargement of precast concrete structures	Highlights 3 Additional 3	Bench production method	28.09-04.10.2020
7	Precast Concrete Production Efficiency	Reinforced Concrete Product Requirements	Highlights 2 Additional 2	Prefabricated reinforced concrete structures	05.10-11.10.2020
8	**1st Intermediate (Midterm) Attestation**			Multivariate test	12.10-18.10.2020
9	Dosing and mixing of components	Preparation of chemical additive solutions	Highlights 2 Additional 2	Dosage of materials	19.10-25.10.2020
10	concrete mix	Methods for preparing a concrete mixture	Highlights 4 Additional 4	Concrete mixing unit	26.10-01.11.2020
11	Physic-mechanical basis of mixing processes	Gravity cyclic concrete mixers	Highlights 4 Additional 4	Types of concrete mixers	02.11-08.11.2020
12	various types of	Steel adhesion to	Highlights	Reinforcement	09.11-

Week	Theme of the lecture	The theme of practical work	Reference on Literature	Task	Deadline
	concrete mixtures	concrete	2 Additional 3	class for building products	15.11.2020
13	Concrete Mix Production Line	Assembly of grids and frames from steel reinforcing bars	Highlights 4 Additional 4	Reinforcing elements manufacturing	16.11-22.11.2020
14	Reinforcing steel types	The main mechanical properties of reinforcing steel grades and grades	Highlights 4 Additional 4	Reinforcement of stressed structures	23.11-29.11.2020
15	**2nd Final (Endterm) Attestation**			Multivariate test	30.11-06.12.2020
	Final exam			Tickets	According thq schedule

**In the calendar – themed calendar, changes are possible taking into account holidays*

4. List of references:

Basic	Auxiliary
1. Bazhenov Yu.M. [Electronic resource] Concrete technology. - M .: 3-ed. - M .: ASV, 2002 .-- 500 p.	1. A. G. Zotkin Concrete and concrete structures / A.G. Zotkin. - 2nd ed., Rev. and add. - M .: ASV, 2016 .-- 328 p .: ill. - ISBN 978-5-4223-0106-2
2. Shmitko E.I., Krylova A.V., Shatalova V.V. Chemistry of cement and binders: textbook. allowance. - SPb. : Prospekt Nauki, 2006 .-- 206 p.	2. Trofimov Boris Yakovlevich. Technology of precast concrete products: textbook. manual / B.Ya. Trofimov. - SPb .; M .; Krasnodar: Lan, 2014 .-- 384 p .: ill. - (Textbook for universities. Special literature). - ISBN 978-5-8114-1636-3
3. Building materials: laboratory. workshop: textbook method. manual / Ya. N. Kovalev [and others]; ed. Ya.N. Kovaleva. - Minsk; M .: New knowledge: Infra-M, 2016 .-- 633 p .: ill. - (Higher education. Bachelor's degree). - ISBN 978-985-475-541-0.	3. Yuan Yuai. High-quality cement concrete with improved properties: per. with whale. / Yu Yuan, V. Lin, T. Pe. - M .: ASV, 2014 .-- 448 p. : ill. - ISBN 978-5-93093-990-3
4. Zotkin Anatoly Georgievich. Concrete with effective additives: textbook. - practical. allowance / A.G. Zotkin. - M .: Infra-Engineering, 2016 .-- 160 p .: ill. - ISBN 978-5-9729-0079-4	4. Winter monolithic concreting technology: textbook. allowance / EI Batyanovsky [and others]. - M .: Assots. builds. universities, 2009 .-- 232 p .: ill. - on the region. cap .: Technology and methods of winter monolithic and on-site concreting. - ISBN 978-5-93093-

	620-9

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														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Max score results
1	Activity in the discussion of lectures	10	24.08 - 30.08.2020	31.08 - 06.09.2020	07.09 - 13.09.2020	14.09 - 20.09.2020	21.09 - 27.09.2020	28.09 - 04.10.2020	05.10 - 11.10.2020	12.10-18.10.2020	19.10 - 25.10.2020	26.10 - 01.11.2020	02.11 - 08.11.2020	09.11-15.11.2020	16.11 - 22.11.2020	23.11 - 29.11.2020	30.11 - 06.12.2020	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:

Price = (A + T + 3)xO

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 Akmalaevich K.
(position) (surname, name)