JSC "KAZAKH-BRITISH TECHNICAL UNIVERSITY"

REGULATION
on conducting a Republican subject Olympiad of the Kazakh-British Technical University among school students of 10-12 grades of the Republic of Kazakhstan

Almaty
Year 2020

1 General provisions

1.1 This Regulation (hereinafter - the Regulation) defines the rules and procedure for the Olympiad, determines the organizational and preparatory part, the rules for participation and identification of winners, as well as the procedure for participation in the Olympiad.

1.2 The main goals of the Olympiad are:

- Quality selection of applicants for 2020-2021 academic year;
- Identification of talented and gifted youth of Kazakhstan;
- Providing the opportunity to participate in the Olympiad for applicants from all the regions of the Republic of Kazakhstan.

2 Language of the Olympiad – Kazakh, Russian and English.

3 Format of the contest

3.1 The Olympiad is conducted in two rounds – qualifying remote (I) and final face-to-face (II).

3.2 Dates, time and possible changes will be published on KBTU social media (@kbtu_official) and the official website (www.kbtu.kz).

4 Areas of the Olympiad, contest subjects, prize places and their holders

4.1 The Republican subject Olympiad for students of 10-12 grades is held in the following five areas:

№	Area	Subject for the remote round	Subject for the face-to-face round
1	ICT	Mathematics	Sports programming
2	Business and Control	Mathematics	Mathematics
			Case studies
3	Manufacturing industries	Mathematics	Physics
4	Maritime transport and technologies	Mathematics	Physics
5	Chemical engineering and processes	Mathematics	Chemistry

4.2 In each area of the Olympiad, the winners of the first, second and third places will be identified after summing up the results of the first and second rounds. These participants of the Olympiad will receive the following discounts for studying at KBTU as prizes:

№	Area	Prize places and their quantity	Discounts
1	Information and Communication Technologies	I – 2	100%
		II – 2	50%
		III - 2	30%
2	Business and Control	I – 2	100%
		II – 2	75%
			50%
		III - 2	50%
			30%
3	Manufacturing industries	I – 2	100%
		II – 2	50%
		III - 2	30%
4	Maritime transport and technologies	I – 1	100%
		II – 1	50%
		III - 2	30%
5	Chemical Engineering and processes	I – 1	100%
		II – 1	75%
		III - 1	50%

Discounts are given to the winners of the Olympiad for studying at educational programs relevant to the areas of the Olympiad:

№	Area of the Olympiad	Group of educational programs	Educational program
1	Information and Communication Technologies	Information technologies	Information systems
			Computer systems and software engineering
			Mathematical and Computer modeling
		Electric engineering and automation	Automation and control
2	Business and control	Management and control	Economics
			Management
		Audit and taxation	Accounting and Audit
		Finance, Economics, banking and insurance	Finance
		Marketing and Advertising	Marketing
3	Manufacturing industries	Mining engineering and extraction of mineral resources	Petroleum Engineering
			Geology and exploration of mineral deposits
4	Maritime transport and technologies	Maritime transport and technologies	Marine Engineering and technologies
5	Chemical Engineering and processes	Chemical engineering	Chemical technologies of

		and processes	organic matters
			Chemical technology of industrial and biopolymers

5 I remote round

5.1 On **March 11, 2020,** the participant will need to go remotely (online) the first round of the Olympiad through a computer with Internet access. The first round will be held on the portal https://www.classmarker.com/ . Links to the first round of the Olympiad will be available in your account on the portal at: https://www.classmarker.com/ .

5.2 The participant must **register before March 9, 2020** http://bit.ly/kbtuolympreg , since access to the first round of the Olympiad will be open only to **registered** participants. During participation in the Olympiad, a participant can choose **only one area.**

5.3 Login and password for participation in the Olympiad will be sent to the **email** of every registered participant after **March 9, 2020**.

5.4 A participant has a right to take the remote round in the period from **00:00 to 23:59** during the day of (**March 11, 2020)** and only **once**. After passing the subject a participant must inform the system about its completion by means of active elements of the personal page interface.

5.5 During the registration a participant chooses **one** area of the Olympiad. At the remote round the participant takes a test on the subject relevant to the chosen area of the Olympiad:

5.5.1 In the area of "**Information and Communication Technologies**", the participant of the Olympiad will have to pass a math test, consisting of 20 tasks. Test delivery time is 1 hour. Two difficulty levels: easy questions for 1 point and difficult questions for 2 points. 100 best results will be selected. In case of scoring equal results, preference will be given to those who have solved the greatest number of difficult tasks in the shortest time.

5.5.2 In the area of "**Business and Control**", the participant of the Olympiad will have to pass a math test, consisting of 20 tasks. Test delivery time is 1 hour. Two difficulty levels: easy questions for 1 point and difficult questions for 2 points. 100 best results will be selected. In case of scoring equal results, preference will be given to those who have solved the greatest number of difficult tasks in the shortest time.

5.5.3 In the area of "**Manufacturing Industries**", the participant of the Olympiad will have to pass a math test, consisting of 20 tasks. Test delivery time is 1 hour. Two difficulty levels: easy questions for 1 point and difficult questions for 2 points. 100 best results will be selected. In case of scoring equal results, preference will be given to those who have solved the greatest number of difficult tasks in the shortest time.

5.5.4 In the area of "**Maritime transport and technologies",** the participant of the Olympiad will have to pass a math test, consisting of 25 tasks. Test delivery time is 1 hour. 50 best results will be selected. In case of scoring equal results, preference will be given to those who have solved the greatest number of points in the shortest time.

5.5.5 In the area of "**Chemical Engineering and processes**", the participant of the Olympiad will have to pass a math test, consisting of 20 tasks. Test delivery time is 1 hour. Two difficulty levels: easy questions for 1 point and difficult questions for 2 points. 50 best results will be selected. In case of scoring equal results, preference will be given to those who have solved the greatest number of difficult tasks in the shortest time.

5.6 After the end of testing, the results of testing the participant (points) will appear on the screen. The final results of passing to the second round will be known until **March 13, 2020** on the KBTU social networks (@kbtu_official) and on the official website (www.kbtu.kz) .

5.7 The participant has the right to appeal to verify his response. In case of technical failure of the portal, the participant must inform the Call Center organizers about this. After identifying the problem, the commission will issue a solution. Permission to re-participate is possible only if the registration system does not intentionally end the tour initiated by the student.

5.8 400 participants with the highest results in their area will be admitted to the second round of the Olympiad:

№	Area	Number of the admitted participants to the second round
1	ICT	100
2	Business and Control	100
3	Manufacturing industries	100
4	Maritime transport and technologies	50
5	Chemical engineering and processes	50

6 Final face-to-face round

6.1 Participants who have gained the required number of points established by the decision of the commission are allowed to the final intramural round of the Olympiad. The face-to-face round of the Olympiad will be held in Almaty, at the Kazakh-British Technical University at the address: Tole Bi, 59.

6.2 Participants who have passed the final intramural (II) round must confirm their participation by calling the University's Call-center 5 calendar days prior to the beginning (date).

6.3 Participants must arrive at the Olympiad not less than one hour before the start of the face-to-face round.

6.4 The participant must have an identity card (birth certificate / passport) with him, declared during the remote round for the intramural registration at the venue. During face-to-face registration, the participant is given a coupon for lunch, a T-shirt, an olympiad program and additional materials in the form of notebooks and pens.

6.5 Subjects to pass during the face-to-face round must be related to the subject area of the Olympiad

6.5.1 In the second round of the Olympiad in the direction of "Information and Communication Technologies", the participant is provided with a personal computer running under the **Windows** operating system with the necessary software

At the Olympiad, a special **ejudge contest system** is used, which allows you to check results in real time, provides information about the current situation of participants, as well as the possibility for participants to ask questions and get answers to them from the jury.

Before the main round, a **trial round** is conducted (approximately 1 hour in duration, where 1-2 simple tasks are offered for solution). The trial round is aimed at **familiarizing** participants with the equipment, software and rules of the Olympiad. The results of the trial round are **not taken into account** when summing up the results of the Olympiad.

In the main round, participants will be offered **5-7 tasks**. The round lasts 3 hours. The jury may extend the tour time in case of any unforeseen circumstances.

During the round, participants solve the suggested problems. The solution to the problem is a program written in one of the acceptable programming

languages. Different tasks can be solved in different **programming languages**. The program should be a **single file.**

It is strictly **forbidden** to use any storage media in electronic form, electronic devices and communications, to communicate with team leaders and other participants.
The results are checked right during the competition. During the first 2 hours of the round, everyone has access to the table that displays the current position of the participants and the points earned by each participant for each task. An hour before the end of the round, this table ceases to be updated. Final results are announced at the award ceremony.
During the round the participants may communicate only with the **jury members** and hall **attendants**.

The participant can send a question to the jury, and it is assumed that the answer to it can be "**Yes**" or "**No**". The jury has the right to answer "**No comments**", this usually means that the answer to the question is in the condition of the problem.
A participant may be **disqualified** for violating the rules of the Olympiad.

The following compilers will be available on the server where the solutions will be checked:

- **C/C+**
- **Free Pascal**
- **Java**
- **Python**

The results are **checked** during the competition. Using the web-based interface, participants send their solutions to the **testing system**. The system compiles the sent program with the specified compiler and, in case of successful compilation, will check the program on a variety of tests. The program run time on each test and the size of available memory are **limited**, these restrictions will be indicated in the task formulations. These memory limits include all memory used by the program, including memory allocated for program code, the stack, and dynamic memory.

Shortly after sending the solution (usually less than a minute), the participant receives a message with the test **results:**

Test check results	**Description**	**Possible reason**
OK	Tests passed	

Wrong Answer	The answer is incorrect	Error in the program. Incorrect solution algorithm.
Presentation Error	The verification program cannot check the output as their format does not comply with the described in the problem statement	Invalid output format. The output file has an invalid name or is missing. The program does not print the result. Extra information is issued to the output file. The program does not close the output file.
Time Limit Exceeded	The program has exceeded the established in the statement limit of time.	Ineffective solution. Error in the program.
Runtime Error	Execution error.	The program came out with a non-zero exit code or an emergency exit of the program (crash) occurred. In this case the result of the program work is not checked. A C/C++ program does not end with the 'return 0' statement. A non-zero return code is indicated in the program. The program exceeded the established in the statement memory limit.

Evaluation system:

- A participant who solved higher amount of tasks is classified as the top.

- If the number of solved problems is equal, the participant who has less total penalty time is considered higher.

- If the number of solved problems and the penalty time are equal, the participant who is the first to pass his last credited task is classified above
- The penalty time is calculated as the sum of the penalty time for all tasks. For solved problems, the penalty time is the time in minutes elapsed from the start of the round to the completion of the task, plus 20 penalty minutes for each incorrect solution on this task. For unresolved tasks no penalty time is charged.
- When compiling the results table, only the time of the first correct solution from each team for each task is taken into account.

6.5.1 Participants in the second round of the Olympiad in the area of "**Business and Control"** will be divided into two groups: economic and business group. In each of the groups certain tasks will be presented, as well as their winners in the first, second and third places, respectively.

Tasks of the second round:

Economic group - it is proposed to solve five problems in mathematics within one hour, based on the school curriculum, and a case in groups on the topic "Economics" during two hours.

Business group - it is proposed to solve two cases and present the solution in the form of a 10-minute presentation (5 minutes for each case). You can use the Power Point presentation, oral presentation, markers, flipcharts, and whatman paper for this. The tasks themselves will be available on the site the day before the start of the Olympiad

6.5.2 In the field "**Manufacturing industries**", the participants of the Olympiad will have to pass a physics test, consisting of 20 tasks. Test delivery time is 1 hour. Two difficulty levels: easy questions for 1 point and difficult questions for 2 points. In case of scoring equal results, preference will be given to those who have solved the greatest number of difficult tasks in the shortest time.

6.5.3 In the area of "Maritime transport and technology", the participant of the Olympiad will have to pass a physics test (multiple choice), consisting of 30 tasks. Test delivery time is 1 hour. In case of scoring equal results, preference will be given to those who scored the most points in the shortest time.

6.5.4 In the area of "Chemical Engineering and Processes", the participant of the Olympiad will have to pass a chemistry test consisting of 10 questions and 4 tasks. Test delivery time is 3 hours. Correct answers to test questions count for

2 points and tasks for 20 points. In case of scoring equal results, preference will be given to those who have solved the greatest number of difficult tasks in the shortest time.

6.5.5 Each participant will be given a **notebook** for notes, the **first** half of which must be used as a **clean-up** and write down all the **solutions** and answers of problems, the **second** half as a **draft.** Participants who did not write any solutions in the notebook will be disqualified from the Olympiad.

6.6 The participant has the right to appeal to verify his response. After identifying the problem, the commission will issue a decision to the participants.

7 Progress review

5.1 Winners of the Olympiad are determined by the jury and the Commission of the Olympiad. The result of each participant is the sum of their points in the second round. The list is formed in descending order.

5.2 The jury of each area of the Olympiad determines one winner for 1,2 and 3 places. The results of the Olympiad are documented in a protocol signed by the jury and the winners themselves.

5.3 Winners of the Olympiad receive grants and discounts on studying at KBTU.