

8 Goals and objectives of the software

Objectives of the Olympiad:

8.1 Identification and development of creative abilities and interest in scientific (research) activities among final-year students, promotion of scientific knowledge, and support of their professional orientation.

8.2 Disclosure of students' professional and personal potential, development of self-awareness and creative abilities, and creation of conditions for self-realization and self-affirmation.

8.3 Fostering students' civic responsibility.

8.4 Selection and support of the most talented and gifted students through the allocation of Rector's grants for study at the higher education institution.

Tasks of the Olympiad:

8.5 Stimulating students' interest in the subject and identifying individual abilities.

8.6 Improving forms of interaction between general secondary education institutions and higher education institutions in working with students and prospective applicants.

8.7 Providing assistance to students in their professional orientation.

10 The procedure for organizing, conducting, participating and determining the software

10.1 Students of graduating classes of educational institutions of the Republic of Kazakhstan participate in the educational program on a voluntary basis.

10.2 The software is carried out using its own Internet resource, the entry point of which is located on the website www.atu.edu.kz, JSC «ATU».

10.3 The SO is held in two rounds:

I – first (qualifying) round;

II – second (final) round of the Olympiad.

10.4 Students who have pre-registered are allowed to participate in the first round of the competition in the established form, F.ATU-CFD-RPA-8.5.-2024-05, through the website of JSC «ATU» <https://atu.edu.kz>.

10.5 **Round 1** –easy questions - **online testing** in specialized subjects:biology-chemistry, biology-geography, chemistry-physics, physics-mathematics, mathematics-computer science, mathematics-geography, geography-English, drawing-drawing, drawing-compositionParticipants must demonstrate theoretical knowledge acquired while studying the subject at school.

The number of test tasks for each subject is 25.

The maximum number of points for each subject is 50.

The total passing score for the second round in two subjects is 75 points.

10.5.1 The time allocated for online testing in all core subjects is 1 hour 30 minutes (90 minutes).

10.5.2 **In the discipline "English language"**-Completion of a multiple-choice lexical and grammar test (Test of Grammar and Vocabulary - 50 questions). One point is awarded for each correct answer. The results of the first round are evaluated on a point scale. Those who scored 25 points are allowed to participate in the second stage.

10.5.3 **In the disciplines "Drawing-drawing" and "Drawing-Composition"** -Students must submit a portfolio of creative work in scanned form to identify their level of preparation and ability to think creatively in creating artistic images.

The maximum score is 50. Participants who score more than 25 points in each subject in the first round will be able to advance to the second round. Works must be sent to the email address:zh.kenesbek@atu.edu.kz

10.6 **2nd round of the Olympiad** –will be held in **online format (via Zoom or Google Meet)** in all specialized subjects of the Olympiad:biology-chemistry, biology-geography,

chemistry-physics, physics-mathematics, mathematics-computer science, mathematics-geography, geography-English, drawing-drawing, drawing-composition.

10.6.1 In the disciplines "Mathematics" and "Physics" -Solving problems online (via Zoom or Google Meet). There are four problems, including two of advanced difficulty and two of medium difficulty. A maximum of 30 points are awarded for correctly solving a difficult problem. A maximum of 20 points are awarded for correctly solving each medium difficulty problem. The time allotted for solving the problems online is 1.5 hours. The maximum score is 100.

In the discipline "Computer Science" - questions of medium complexity. The number of test questions is 50. Each question is given 5 possible answers, of which only one is correct. For each correct answer – 2 points. The time allotted for online testing is 1 hour and 30 minutes (90 minutes). The maximum number of points is 100.

In the discipline "Chemistry" -There are 3 problems, 2 of which are of medium difficulty and 1 of which is of difficult difficulty. A maximum of 30 points are awarded for the correct answer to problems 1 and 2, and a maximum of 40 points are awarded for the correct answer to problem 3. The time allotted for solving the problems online is 1.5 hours. The maximum number of points is 100.

In the discipline "Biology"- sThe final round will include answering theoretical questions and solving problems on the subject of general biology, as well as writing essays on the topics: "*The Impact of Technology on Biodiversity*," "*Genetics and Its Role in Modern Society*," "*The Impact of Lifestyle on Human Health*," "*Modern Environmental Problems and Solutions*"The time to prepare for the answer is 60 minutes, of which 30 minutes are allocated for the creative mini-project (writing an essay).

The essay must be written on 1 page in the following format: MS Word95/97/2000/XP, portrait, font size – 12, line spacing – single, margins on all sides –20 mm, in Times New Roman, Times New Roman KK EK font. The essay structure should consist of:

- Introduction
- Main part
- Conclusion

The results of the second (final) round will be the arithmetic mean of the two scores.

The 1st (first) grade will be awarded for answers to theoretical questions and problem solving, the 2nd (second) grade will be awarded for a mini creative project - writing an essay, the maximum grade is 100 points (100%).

In the discipline "Geography"-Natural-geographical research projects (depending on the geographical location of the place of residence).

1. The impact of climate change on your region (25 points)
2. Analysis of demographic changes in local communities (25 points)
3. Population, migration, age structure (25 points)
4. Analysis of waste recycling possibilities (25 points)

In the research project, 25 points are awarded for each criterion, with a maximum score of 100. Each participant is given 15 minutes for the online defense.

Requirements for completing a scientific project

1. Selecting a topic

- must be relevant, researchable and aimed at solving a specific problem;
- It is recommended to choose a topic related to your region, academic subject, or area of research.

2. Goal and objectives

Target– shows why the project is being carried out.

Tasks– steps required to achieve the goal (3–5 tasks).

3. Methods (research approaches)

- The project must clearly indicate the methods used:
- observation;

- comparison;
- statistical analysis;
- questionnaire;
- use of literary sources.

4. Theoretical part

- analysis of scientific literature on the topic;
- review of terms, basic concepts and previous research.

5. Practical part

- processing of collected data;
- tables, diagrams, graphs;
- experimental results.

This part is the most important in the project.

6. Conclusion

- Key findings;
- specific results related to the region, population, ecology.

7. List of references

- drawn up according to GOST or school standards;
- includes books, articles, internet sources.

8. Appendices

- photographs, maps, sample questionnaires, tables, etc.

Requirements for the design of a scientific project

- font: Times New Roman, 14 pt;
- line spacing: 1.5;
- margins: 2 cm;
- volume: 10–20 pages (for a school project);
- The presence of a title page and table of contents is mandatory.

In the English language discipline, the 2nd round consists of 3 parts:

1. Completing a listening test (Test of Listening Comprehension - 10 tasks) tests text comprehension. A 2-minute recording of the text is presented twice. After listening, participants complete a multiple-choice test.

Each correct answer is worth 2 points. Completion time: 10 minutes.

2. The Test of Reading Comprehension (Test of Reading Comprehension) is completed without a dictionary. The written tasks are multiple-choice. Participants must decide whether a statement is true or false and circle the appropriate sign (T or F) on their answer sheet. There are 5 tasks for the first text, and 5 tasks for the second text. Two points are awarded for each correct answer.

Completion time: 25 minutes.

3. Testing the participants' communication skills in unprepared speech (Speaking: dialogue) is carried out in the form of a conversation with a jury member on the topics: My family and I. Holidays: birthday, New Year. My friends. Favorite pet. Seasons, weather. My hobbies. My school. My city. Profession. My friends. My homeland is Kazakhstan. My future profession. My dream for the future. Vehicles. Travel. How do I spend my free time? What sport do you do? This section monitors the participant's oral speech: correct use of vocabulary - 12 points, grammar - 12 points, correct pronunciation -12 points, correct sentence construction - 12 points, literacy of presentation of the material - 12 points. Completion time: 10-15 minutes.

The duration of the English language Olympiad is 2 academic hours.

Results of the first and second rounds are determined using a 100-point scoring system. A passing grade is defined as a score between 50 and 100 points:

“excellent” – 90-100;

"good" – 75-89;

"satisfactory" - 50;

"unsatisfactory" - 0-49.

10.7 In the creative discipline "Drawing" Participants must demonstrate a high level of graphic mastery, an ability to think visually, and the application of the laws of perspective and composition. They must create a composition of plaster geometric bodies with drapery, ensuring a competent compositional solution, the correct distribution of light and shadow, and an expressive spatial construction of form.

Basic requirements:

Correctly choose the scale of the drawing in relation to the plane of the entire sheet;

Correctly compose the drawing on the sheet, i.e. the placement of the drawing within the format boundaries should be balanced and compositionally holistic;

Competent perspective construction of the geometric figures and household objects included in the composition, accurate rendering of proportions and volume of forms using chiaroscuro in the shading technique;

The completeness of the tonal elaboration of the entire drawing (the rendering of relationships in light and shadow, the identification of reflexes and highlights) is the integrity of the drawing.

The tools, materials, and technique are at the participant's discretion. The drawing is done by hand on A3 paper.

Submissions must be submitted electronically. Acceptable extensions are: "JPG," "JPED," "PNG," and "PDF," and must be up to 5 MB in size, but no smaller than 1 MB.

Duration of the task is 1 hour (60 minutes).

Send your work to the email address: zh.kenesbek@atu.edu.kz

In the second round, winners are determined by points earned, with the participants with the best scores becoming the winners. The maximum number of points is 50.

In the creative discipline "Drawing" Students must demonstrate a well-drawn drawing, have a firm grasp of the rules and conventions of images and notations, and be able to apply the laws of perspective and composition. One (1) A4-sized drawing must be submitted.

At the subject Olympiad, the participant is asked to draw three projections of an object (part) based on an axonometric projection, made in a rectangular isometric projection with all the necessary dimensions to scale and inscriptions about the object: a top view, a front view, and a left view in the same scale.

Basic requirements:

The number of images (views, sections, cuts) should be minimal, but still fully reveal the shape of the object;

The selection of the part's position for obtaining the main image, which can be either a view or a sectional view, is of great importance. It should provide the most complete representation of the shape and dimensions of the parts;

The total number of dimensions on the drawing should be minimal, but sufficient for the manufacture and control of the product;

Linear dimensions on drawings are indicated in millimeters, but the unit of measurement is not indicated;

Extension lines are drawn perpendicular to the part outline, then at a distance of at least 10 mm, parallel to the dimension line. The dimension line is delimited on both sides by arrows. The distance between parallel dimension lines must be at least 7 mm. Extension lines extend 1–5 mm beyond the ends of the dimension line arrows.

The ends of the axial and center lines must extend beyond the contours of the image of the object, but no more than 5 mm.

Tools, materials: sharpened regular or mechanical (0.3 and 0.5 mm) pencils, rigid rulers (except metal ones), squares of different sizes with thin sharp ends and beveled edges (with angles of 30, 45, 60), compasses.

Submissions must be submitted electronically. Acceptable extensions are: "JPG," "JPED," "PNG," and "PDF," and must be up to 5 MB in size, but no smaller than 1 MB.

Duration of the task is 1 hour (60 minutes).

Send your work to the email address: zh.kenesbek@atu.edu.kz

In the second round, winners are determined by points earned, with the participants with the best scores becoming the winners. The maximum number of points is 50.

In the creative discipline "Composition"-Participants must demonstrate the ability to create a figurative-associative model based on a given source, demonstrating a high level of creative thinking, the ability to interpret primary information, and compositional skills. They must produce an artistic work in which the image, associations, and form represent a coherent concept, logically constructed, and expressively presented.

Basic requirements:

To correctly interpret a given source, identifying key associative features, moods, characteristic features and transforming them into an artistic image;

Create a holistic figurative composition in which the compositional center, secondary elements and their interrelations will be logically subordinated to the general idea;

Demonstrate originality and depth of concept, the ability to move away from a literal reading of the source and offer a creatively reworked concept;

To accurately convey the structural, plastic and rhythmic characteristics of the composition, observing proportions, harmony of lines, balance of masses and expressiveness of silhouette;

Achieve compositional unity through tonal, color, or graphic elaboration, emphasizing the emotional state of the image, conveying texture, spatial relationships, and the author's interpretation of the theme.

Tools, materials: hard pencil (T, H), A3 watercolor paper, eraser, sharpener, paints (watercolor or gouache), brushes (depending on the choice of paint), container for water.

Submissions must be submitted electronically. Acceptable extensions are: "JPG," "JPED," "PNG," and "PDF," and must be up to 5 MB in size, but no smaller than 1 MB.

Duration of the task is 1 hour (60 minutes).

Send your work to the email address: zh.kenesbek@atu.edu.kz

In the second round, winners are determined by points scored, with the participants with the best scores becoming the winners. The maximum number of points is 50..

10.8 The results of the first and second rounds are determined in points:

10.8.1 Round 1 – passing score – 75 points, maximum number of points – 100;

10.8.2 Round II – winners are determined by the points scored; participants with the best results become winners.

10.9 When conducting the software, it is mandatory to maintain academic integrity with proctoring.

10.10 The organization and holding of the competition, as well as the awarding of the winners and prize winners of the competition, is carried out by the organizing committee of the competition.

10.11 The winners and runners-up of the competition are determined based on the results of the participants in the final round of the competition.

10.12 Winners and prize winners of the final round of the competition will be awarded with appropriate diplomas.

10.13 The teachers of the winners and prize winners of the PO are awarded certificates by decision of the organizing committee.

10.14 Diplomas of winners and prize winners of the final stage of the PO are signed by the Rector of JSC "ATU".

11 Discipline during the SO

11.1 During the competition it is prohibited to have with you: cameras, any cellular communication devices equipped with an information transfer function (pagers, cell phones, tablets, iPads, iPods, Smartphones, walkie-talkies, laptops, players, modems (mobile routers), smart watches, smart glasses, fitness bracelets (trackers), voice recorders, wired and wireless

headphones, earpieces, wireless video cameras, GPS navigators, GPS trackers, remote control devices, as well as other information exchange devices operating in the following standards: GSM, 3G, 4G, 5G, VHF, UHF, Wi-Fi, GPS, Bluetooth (Bluetooth), Dect (Dect).

The following items are also not allowed: cheat sheets, educational literature, the periodic table and salt solubility tables, calculators, and A0-A10 paper.

If prohibited items specified in this paragraph are discovered during the inspection of the video recording for testing, the organizing committee of the testing software will draw up a Report and the participant will not be admitted to the next round.

If a fake person is identified during the launch of testing, the testing software organizing committee draws up a "Report on the identification of a fake person during the launch of testing (electronic format)"; the participant is not admitted to the next round.

The outcome of the competition depends largely on discipline, which must be maintained. Failure to do so risks elimination or the annulment of the participant's results. Here are some key points that participants should be aware of and adhere to during the second round of the competition:

The participant is not allowed to:

- leave a ZOOM conference without permission from the committee;
- turn off ZOOM conference cameras (computer class) without the permission of the commission;

However, it is not permitted to leave during the first and last hours of the Olympiad, except in cases related to emergency, force majeure situations, and/or cases related to the health of applicants:

- to talk;
- make noise before or during the Olympics;
- attempted interference with the testing system and violations related to testing.

In the event of a violation being identified by a participant, the inspector draws up a Report on the identification of prohibited items and the cancellation of the participant.

After the completion of the software, the Organizing Committee will review the Olympiad video surveillance recordings in electronic format and check the registration files (logs) received in the Olympiad system.

Software proctoring is a system used to ensure the integrity of software testing. The process involves observing participants via webcams, verifying their identity with Face ID and a government ID, and monitoring their screen and actions to prevent cheating.

11.2 How software proctoring is performed:

- **Identification:** The applicant's identity is verified using Face ID technology, an ID card, and the front camera.

- **Observation:** Surveillance is carried out through computer webcams.

- **Monitoring:** The program monitors user activity on the computer, including tab switching and third-party software use, as well as extraneous sounds and movements.

What is prohibited during proctoring?

- Presence of unauthorized persons in the premises.
- The examinee is not in the frame.
- Use of gadgets, notes or other software.
- Partial or complete covering of the face.

What happens in case of violations?

- Test results may be invalidated even if violations are discovered after the exam is completed during a re-check of the video recordings.

12 Dates and place of the event

12.1 The date and time of the selection round, as well as the list of organizations involved in conducting the competition, are established by the organizing committee and published on the Internet resource JSC «ATU».

12.2 The date, time and place of the final round are determined by the organizing committee, approved by the Chairman of the organizing committee and published on the Internet resource JSC «ATU».

13 Procedure for summing up the results of the software

13.1 Based on the results of the second round of the competition, the jury, after agreement with the organizing committee, determines the winners among the students in accordance with the points scored in the first and second rounds of the competition.

The system of assessing the final result in subjects:

Tours	Evaluation formula	Example:
Round 1	1 prof.pres. + 2 prof.pred.	$30 + 45 = 75$ points
Round 2	1 prof.pres.* 0.5% + 2 prof.pres.*0.5%	$70*0.5\% + 80*0.5\% = 35+40=75$ points
Result	<u>Round 1 + Round 2</u> = Final result 2	$\frac{75+75}{2} = 75$ points

* **0.5%** -The value represents the percentages or coefficients used in the formula to weight or adjust these indicators. To calculate the difference, subtract one indicator from another, then apply these coefficients to obtain the final value;

* **1 prof.pres.**– the first specialized subject of the Olympiad;

* **2 prof.pres.**– the second core subject of the Olympiad.

13.2 If the Olympiad participants have the same scores, places are awarded to those with the highest average scores in two core subjects of the second round.

If the Olympiad participants have the same scores, as well as the same average scores in two core subjects of the 2nd round, the scores in the core subjects of the 1st round are taken into account.

13.2.1 **for 1st place** First-degree diplomas and certificates are issued, which grant the right to study at the expense of the rector's grant for the first year of study in the educational program JSC "ATU", according to the specialized subjects, subject to successful passing of the UNT (more than 70 points);

13.2.2 For the 2nd place, 2nd degree diplomas and certificates are awarded, which give the right to a 50% discount on the first year of study (within one academic year) in the EP JSC «ATU», according to the specialized subjects, subject to successful passing of the UNT (more than 70 points);

13.2.3 For the 3rd place, diplomas of the 3rd degree and certificates are awarded, which give the right to a 30% discount for the first year of study (within one academic year) in the EP JSC «ATU», according to the specialized subjects, subject to successful passing of the UNT (more than 70 points);

13.3 The jury's decision to determine the winners of the competition is formalized in a corresponding protocol.