



Voronezh State University,  
Voronezh, Russia

April 23<sup>rd</sup> – 27<sup>th</sup> 2015

<http://iturnir.ru/>, <http://vk.com/iturnir>



## **International Student Tournament of Three Sciences 2015 Official Rules**

### **I. General Principles**

International Student Tournament of Three Sciences (hereinafter – the Tournament) is designed to help talented students of the natural sciences find employment. The Tournament gives students an opportunity to use their knowledge and creativity to solve real science problems. It also helps to assess the quality of education, and to establish contacts between students and innovative companies.

### **II. Tournament Organization**

The Tournament is to be held on 23<sup>rd</sup>-27<sup>th</sup> April, 2015 at Voronezh State University.

The Organizing Committee and the Jury are responsible for organizing and supervising the Tournament.

The Organizing Committee:

- arranges the Tournament schedule;
- invites teams to participate in the Tournament and provides the necessary information;
- approves the members of the Jury;
- consults the members of the Jury and coordinates their work;
- prepares all the necessary methodological and informational documents;
- decides on the Tournament results and awards the winners;
- prepares the final report on the Tournament results.

The competing teams complete the Tournament tasks and are judged and scored by the Jury, who then determine the winners according to the total score: prizes are awarded for the 1st, the 2nd and the 3rd places in the individual and team championship.

To enter the Tournament the teams should complete online registration at the Tournament's website <http://iturnir.ru> from 1<sup>st</sup> February to 1<sup>st</sup> April, 2015. For more information, please contact the Organizing Committee (e-mail: [iturnir@gmail.com](mailto:iturnir@gmail.com); Tatyana Titova tel. +7-951-541-20-98 – Chief Team

Coordinator; Dmitry Koyuda tel. +7-961-188-39-99 – Chief Organizer of the Tournament, Andrey Malykhin tel. +7-910-738-41-96 – Co-organizer of the Tournament).

Upon recommendation of the Organizing Committee the University administration can award the staff members helping to organize the Tournament with certificates of recognition, cash bonuses and other gifts.

### **III. Tournament Rules**

International Student Tournament of Three Sciences is a team competition for students. The participants of the Tournament are required to use their knowledge and creativity to solve practical science problems and then justify their decisions and solutions at the scientific debate – the Scientific Battles.

Before the Tournament the teams are divided in two leagues - the International League and the Russian League. Each team chooses the League at the registration. Thus, all the International League teams make their reports in English, and all the Russian League teams - in Russian.

**All the reports at the Final Scientific Battle are made in English.**

The teams include up to 6 students. The team members cannot be replaced or changed during the Tournament. The teams choose their captains. Before the Tournament the teams are trained by their supervisors. Although there can be several supervisors, only one of them is allowed to come to the Tournament together with the team. The supervisor is not a team member.

The Tournament consists of 3 rounds: two qualifying rounds and the final round.

#### **THE FIRST ROUND**

In the first round of the Tournament the participants are required to solve the scientific problems published on the website <http://iturnir.ru> prior to the beginning of the Tournament. The list of the problems is prepared by the Organizing Committee.

Before each Scientific Battle, the teams of the two Leagues are divided into groups of 3 or 4 teams (depending on the total number of teams in the League). Each Scientific Battle consists of 3 (4) stages.

The number of stages depends on the number of teams per group. If there are 3 teams in the group, each of them takes one of the following roles: the Speaker, the Opponent, or the Reviewer. If there are 4 teams in the group, each of them takes one of the following roles: the Speaker, the Opponent, the Reviewer, or the Observer.

Before each Scientific Battle there is a contest between the captains that determines the role of each team at the first stage. At the following stages the teams switch roles according to the role scheme of the Scientific Battle.

During the Scientific Battles, all the presentations and speeches by the Speakers, the Opponents, the Reviewers, and the Jury in the International League should be in English, and in the Russian League – in

Russian. If necessary, the speakers may ask for an interpreter (either the members of their teams, or translating devices).

Three-team Scientific Battle				Four-team Scientific Battle				
Team	Role			Team	Role			
	1	2	3		1	2	3	4
1	S	R	Op	1	S	Ob	R	Op
2	Op	S	R	2	Op	S	Ob	R
3	R	Op	S	3	R	Op	S	Ob
				4	Ob	R	Op	S

**The Speaker** (one or two team members) briefly presents the solution to the given scientific problem (physical, chemical or biological) employing presentations and arguments. The Speaker should point out the main ideas and explanations. The use of photos, videos, and other visual materials during the report to illustrate the proposed concepts is strongly recommended. The Speaker may also conduct live experiments if the problem is of an experimental nature. While presenting the solution of an experimental problem the Speaker is recommended to demonstrate the schemes of experimental facilities and describe the measurement technique. If computer modelling is used, the team should present the modelling algorithm and describe the way in which it is used to solve the problem. Presenting a theoretical problem, the teams should suggest a consistent model, justify it, and describe the computation methods and results. If the solution includes both theoretical and experimental parts, it is advisable to compare the theoretical and experimental results and provide the explanation. The report should be finished with a brief conclusion.

**The Opponent** can ask any questions and criticize the report, pointing out possible inaccuracies and mistakes in the understanding of the problem and/or in the solution suggested by the Speaker. The Opponent analyses the advantages and the drawbacks of both the solution and the results obtained by the Speaker. The Opponent team mustn't suggest other solutions to the Speaker's problem or present their own data either supporting or contradicting the results obtained by the Speaker. They can only point out the problematic aspects that need clarification. By the end of the discussion, the participants should agree on what can be changed/improved on the Speaker's solution. All the qualifying questions of the Opponent should not concern anything other than the Speaker's presentation. Questions can be asked by any member of the Opponent team.

**The Reviewer** gives a short summary of the presentations of the Speaker and the Opponent. In particular, the Reviewer should report, whether the discussion between the Speaker and the Opponent has been fruitful or not, and why. The Reviewer should point out the Speaker's mistakes that haven't been mentioned by the Opponent, and also say, which of the Opponent's statements they consider incorrect. The

Reviewer can ask qualifying questions both to the Speaker and to the Opponent. Questions can be asked by any member of the Opponent team.

**The Observer** does not take part in the discussion.

Any team member of the Speaker, the Opponent, and the Reviewer teams can answer the questions addressed to them.

**Discussion.** Only the Speaker's solution is discussed at this stage. The participants should not address any of the results obtained by the Opponent or the Reviewer. All the participants should be tolerant and respectful of each others' ideas. The participants should not repeat anything that has already been said (by the Speaker, the Opponent, or the Reviewer).

Each team participating in the Scientific Battle can take a one-minute time-out. However, the time-out cannot be taken during a team's presentation.

### Scientific Battle Time Regulations

1	The Opponent challenges the Speaker with a problem. The Speaker accepts or rejects the challenge	1 min per challenge
2	Time for the Speaker to prepare	Up to 5 min
3	Speaker's presentation	8 min (for qualifying rounds) 12 min (for final round)
4	Questions from the Opponent and the Speaker's answers	2 min
5	Time for the Opponent to prepare	2 min
6	The Opponent's speech	5 min
7	Discussion between the Speaker and the Opponent	5 min
8	Questions from the Reviewer to the Speaker and the Opponent, and their answers	2 min
9	The Reviewer's speech	3 min
10	Discussion between the Reviewer, Speaker and the Opponent	5 min
11	General discussion	5 min
12	Concluding remarks by the Speaker	1 min
13	Questions from the Jury	5 min
14	Assessing	1 min
15	Jury's comment	5 min

### Limitations

During a Scientific Battle each team member can take the floor up to 2 times (excluding the qualifying questions, answers and discussion).

All the team members reporting at the presentation are considered to be the Speakers.

## **Judging**

After each stage, the Jury (that may include the team supervisors) grades the teams, regarding all the presentations, questions, answers, and participation in the discussion. The Jury evaluates the teams regarding the above mentioned requirements to the Speaker's report, the Opponent's speech and Reviewer's function. Each Jury member grades the teams from 1 to 10.

The sum is then used to calculate the mean grade of each team. The mean grade is multiplied by different coefficients: 3.0 or less (if the Speaker has penalties) for the Speaker, 2.0 for the Opponent, 1.0 for the Reviewer to determine the number of points for each team.

If the Jury consists of five or six members, the lowest grade is discarded. If the Jury consists of seven or eight members, the lowest and the highest grades are discarded. The final score is then rounded to the second decimal.

There is a bonus for the teams playing in the International league. The total number of points got during the qualifying Scientific Battle is multiplied by a coefficient of 1.1.

## **The Challenging**

1. Any of the problems can be presented only once during a single Scientific Battle.

2. During the qualifying Scientific Battles the Opponent may challenge the Speaker with any problem except for the ones that

- a) were discarded by the Organizing Committee;
- b) were presented by the Speaker previously;
- c) were opposed to by the Opponent previously;
- d) were presented by the Opponent previously.

If there are no problems left, the bans 2d), 2c), 2b), 2a) are removed in the said order.

In each qualifying Scientific Battle the Speaker team may reject any two (2) problems without penalty. But the team can still be challenged with these problems in the following Scientific Battles. In the following Scientific Battles the Speaker team may also reject any two problems.

In addition, there are four (4) permanent rejections that can be used by the teams during all the qualifying Scientific Battles (1st and 2nd rounds). It means that the team cannot be challenged with these 4 problems in the following Scientific Battles.

Every additional rejection induces a penalty. For each penalty the coefficient of the Speaker is decreased by 0.2. This reduction is also considered during the following qualifying Scientific Battles.

## **THE SECOND ROUND**

The second round of the Tournament is held in the same format as the first one.

The problems for this round are prepared by the partners of the Tournament: industrial, technological and innovative companies and enterprises. All the problems for the second round are published at the website <http://iturnir.ru> before the Tournament.

### **THE THIRD ROUND (Final)**

After the first two rounds the teams of both Leagues (International and Russian) are rated. The top four teams with the highest total score after the first two rounds are selected for the third round (Final). In the Final the four teams also take part in Scientific Battles (see the 1st round regulations). Before the Final all the coefficients are restored (3 for the Speaker, 2 for the Opponent, 1 for the Reviewer). All the points got previously are reset but the finalist teams get bonuses (2 points for the team being the 1st after the two qualifying rounds; 1 point – for the second-place team; 0.5 points for the third-place team, and 0 points for the last team).

The teams participating in the Final choose any of the given problems to present. The problem can be taken from either of the two problem-lists (for the 1st and for the 2nd rounds), but each team must present a different problem. The teams choose their final problems in the order determined by the results of the qualifying Scientific Battles. The team with the highest score chooses the first, and so on.

All the reports at the Final Scientific Battle should be made **in English only**.

### **Winners**

The champion and the prize-winners are determined according to the total score after the Final Scientific Battle.

According to the results of the individual reports of the participants at the qualifying Scientific Battles, "The best Speaker", "The best Opponent" and "The best Reviewer" is determined.

The Tournament sponsors and partners can also award the best students with special prizes.

Chief Organizer of the International  
Student Tournament of Three Sciences

Dmitry Koyuda