

General rules for the Statistics Olympics of Finland, organised by Statistics Finland

1. Objectives

The general objectives of the Statistics Olympics are:

- To promote curiosity and interest in statistics among students.
- To encourage teachers to use new materials for teaching statistics by promoting the use of real data and search for applications of acquired statistical knowledge.
- To show the role of statistics to students and teachers in various aspects of society, making statistics known as a university study.
- To promote teamwork and collaboration to achieve common goals.

2. Participation

Participation in the Statistics Olympics is open to all secondary-age students who are studying at any officially recognised educational institution of Finland. Students will participate in teams of one to three pupils. All students of the team should belong to the same school and category. Each team should have a teacher from their school acting as the tutor of the team, who will supervise their work, and register the teams in the competition.

There is no limitation on the number of participants / teams from the same centre/school nor on teams supervised by the same tutor.

Students are not allowed to participate in more than one team.

The participation of each team will take place in one of two categories:

Category A: upper secondary school and upper secondary vocational school

Category B: lower secondary school

3. Registration

Tutors of teams wishing to participate in the Statistics Olympics must register their team online on the website of Statistics Finland. The registration must include all the information requested in the form. Participants can send their questions by email to jasmin.maki@stat.fi.

4. Assignments

The Statistics Olympics of Finland include an eliminator assignment open to all students, which is followed by the national final. The winners of the national final can continue to the European final. The Finnish competition is part of the European Statistics Competition.

The first assignment will be done through a web form and will consist of three tests with closed questions. Those questions will have four possible answers of which only one will be the correct option. It is not necessary to finish the test at one go, as students can return to change their answers and continue with the test questions within the given testing period of the assignment. Logging in will close after each 45 minutes, and students can log in again if they wish to continue. The answers should be saved on a regular basis while doing the test.

The assignment of the national final will consist of a presentation made in PDF format and needs to be sent via online competition platform. The two assignments can be done by computer at school, for example.

First assignment:

a. Basic knowledge test

The goal is to answer 10 questions on understanding of basic statistical concepts, interpretation of graphs, basic probability, etc.

A collection of questions with different levels of difficulty will be prepared for each category.

b. Use of official statistical data sources test

The goal is to answer 10 questions on various statistical data. This will require navigation through the website of Statistics Finland as well as websites of other official statistical organisations.

c. Interpretation of statistical reports test

The goal is to answer 10 questions about the Eurostat publication 'The European economy since the start of the millennium — a statistical portrait — 2018 edition'. The publication is only available in English.

Second assignment:

Statistical research output

In this assignment the teams will have to prepare an output from the exploitation of a dataset in Excel which will be facilitated by the organisation. The dataset will be comprehensive and will allow exploration of different facets of information at the choice of participants.

The results of the assignment will be presented in a PowerPoint presentation or in a similar format and should be printed as a **PDF** that includes the following sections:

- Objectives of exploitation / analysis.
- Method of work: tools used, techniques of information analysis, etc.

- Results: tables, graphs, results of analysis, etc.
- Conclusions.

An initial slide will be included in the presentation indicating the name of the team, school, region and the category in which the team participates. The presentation in PDF format for the second assignment will have a total number of eight slides maximum (including the initial slide with information on the team). The PDF will be named with the exact name of the team, and will be uploaded on the platform within the deadline set.

The jury will only evaluate the printable parts of the PDF file. Elements like links to external contents, embedded videos, etc. will not be considered as a part of the assignment and therefore will not count for the evaluation.

The analysis will be limited to the specific dataset; no assignment will be accepted if analysis and exploitation of a different database are carried out nor those to which complementary data has been added. It is allowed to refer to literature. There are no restrictions on the software used for the exploitation of the database.

5. Evaluation Criteria

First assignment

Each of the three tests of the first assignment will be evaluated in terms of success and failure, taking into account that a correct answer carries one point, an incorrect answer subtracts 0.33 points and a question without answer carries no points. The maximum grade for each of the three tests will be 10 points.

The result of the first assignment will be obtained by calculating the arithmetic mean, rounded to one decimal place, of the scores obtained in each of the three tests, and multiplying the result by 10, so that the final score for this assignment will be 100 points maximum. The ranking of all participating teams will be determined in this way. At least a half of the teams will be eliminated after the first assignment.

The points obtained in the first assignment will be used to qualify teams for the second assignment. The evaluation of the three tests and the calculation of the final score for the first assignment will be automatically done by a program.

Those teams who pass the first assignment will receive a diploma.

Second assignment

The following aspects will be taken into account when evaluating the PDF file of the second assignment:

- Output presentation (20%)
 - Output is structured well in differenced parts
 - Presentation is clear and can be easily read

- There are references to sources / bibliography
- Objectives (20%)
 - The output has a clear objective
 - There are well defined secondary objectives
 - The interest in studying the proposed objectives is argued
 - Analysed data are appropriate to study the settled objectives
- Information analysis (40%)
 - There is good balance among tables, graphs and central tendency indicators
 - Tables and graphs have comments so that the most relevant information is highlighted
 - Graphs are appropriate and help to reach, and support, the conclusion
 - Reasons to use each statistical indicator are explained
 - Performed analysis is in concordance with the educational level of the team
- Conclusions (20%)
 - There is one conclusion per objective and a general conclusion as well
 - There are warnings about the limitation of the conclusions of the analysis (should these limitations exist)

The jury will evaluate all statistical research outputs which participated in the final and choose three best outputs from each category, which will be awarded as the winners of the Statistics Olympics of Finland. They will receive personal feedback from their work. The jury will give a general feedback of all the participating outputs. This will be published in a news piece by Statistics Finland. Minutes will be kept of the jury meeting, and the teams can, if they wish, request feedback about their work. Their requests will be answered based on the minutes.

Two winning teams from each category can continue to the European final. If some team does not wish to continue, the team which came third can be asked to continue to the final. If necessary, other teams which performed well in the national final can be asked to continue to the European final. This is done in the case that not enough winning teams wish to continue.

6. Awards

Three winning teams from each category will be rewarded. In addition, students will receive a diploma and gift bag. The teacher will also be given a small prize. Travel expenses to the award ceremony will be covered.

The winning teams of the national phase, one from Category A and one from Category B will receive the following prizes:

The prizes are:

1st prize: EUR 900 / team

2nd prize: EUR 750 / team

3rd prize: EUR 600 / team

In addition, the jury may grant an honourable mention to any team.

In case of the two winning teams have the same tutor, this tutor will only receive one prize.

7. Jury

The jury for the national phase will consist of representatives of Statistics Finland, the University of Helsinki and MAOL ry (Mathematics Teachers' Union).

The jury's decision is final.

The jury may decide not to award any prize.

8. Communication of the jury's decision and awards ceremony

The decision of the jury will be announced to the winners and all participating teams by email and it will be published on the website of Statistics Finland. The award ceremony will be held in Jyväskylä during the LUMA days on June 6, 2019 at 3-5pm.

9. Calendar

Registration period: 19 Oct 2018 to 31 Jan 2019

Testing period for the first assignment: 14 Jan to 14 Feb 2019

Publication and communication of the results of the first assignment: 18 Feb 2019

Submission of the second assignment: 19 Feb to 19 Mar 2019

Announcement of winning teams: 29 March 2019

10. Publication of outputs

The names of the winning teams, the school they come from and their category will be published on the website of Statistics Finland and its communication channels. The awarded outputs in the second assignment or those that received honourable mentions can be published on the website of Statistics Finland. The participants will accept these rules and allow the publication of their works. All the materials presented at the national phase of the Olympics will be retained by Statistics Finland.

11. European phase of the European Statistics Competition

Two winning teams from each category can continue to the European final. If some team does not wish to continue, the team which came third can be asked to continue to the final. If necessary, other teams which performed well in the national final can be asked to continue to the European final. This is done in the case that not enough winning teams wish to continue.

Statistics Finland will inform the teams about the European competition.

12. Reservation of rights

Statistics Finland reserves the right to change the terms and conditions of the national phase of the ESC, especially the dates announced in the calendar, or even its possible cancellation, whenever there is justified cause. These modifications would be communicated to participants by email.

13. Acceptance of the rules of the national phase of the ESC

Participation in the national phase of the European Statistics Competition (ESC) assumes the acceptance of all these rules.