

Rules for the organization and conduct of the "Ion I. Agarbiceanu" general physics competition for engineering students

General considerations

The "Ion I. Agârbiceanu" general physics competition for engineering students is addressed to all students from technical faculties. Its purpose is to promote the discipline of Physics among students and to raise awareness of the importance of this subject in the thorough training of an engineer in the context of current technological evolution.

The official language of the rules is Romanian. In case of discrepancies in the interpretation of the rules, the Romanian version has precedence.

Conduct of the contest:

- Contest date: May 18, 2024
- Venue of the competition: Department of Physics, Faculty of Applied Sciences, University

Organizing Committee

Conf. dr. Cristina CÎRTOAJE (cristina.cirtoaje@upb.ro)

Conf. dr. Gabriel SULIMAN (gabriel.suliman@upb.ro)

Ș.l. dr. Savu-Sorin CIOBANU (savu.ciobanu@upb.ro)

Conf. dr. Irina Alexandra PĂUN (irina.paun@upb.ro)

Contest registration

Any student enrolled at a technical university (undergraduate cycle) can participate in the competition. Participation is individual and based on registration.

Registrations can be made by e-mail at the following addresses:

sorin.ciobanu@physics.pub.ro

irina.paun@upb.ro;

until May 13, 2024.

When registering, the following information is requested:

- Name :
- First name:
- The university

- Faculty:
- Year of study:
- Telephone:
- Email:

The competition

The subjects will be in accordance with the attached syllabus, for the two sections of the competition. The subjects can be theoretical, problems, questions, but also practical applications in which the construction of graphs can be requested.

Stage I: theoretical test, May 18, 9:00 a.m. – 11:00 a.m.

- The theoretical test consists of a written test with 6 subjects.
- Each contestant participates in the contest with 3 of the 6 subjects, of their own choice.
- On the first competition sheet, the candidates will specify under signature the numbers of the subjects selected to be solved .
- Use of non-programmable pocket calculators is permitted.
- The time allocated for this test is 120 minutes.

Stage II: experimental trial, May 18, 2:00 p.m. – 3:00 p.m.

- The first five competitors from each section qualify for the experimental test.
- The experimental test will take place in the laboratories of the Department of Physics, Faculty of Applied Sciences, Polytechnic University of Bucharest
- The experimental test consists in carrying out an experiment chosen in a randomised manner from those proposed by the organizing committee.
- The organizers provide the competitors with the necessary equipment to carry out the experiment.
- The participants must explain the theory the studied process (theory of the work), realize the experimental assembly, perform the experimental measurements, process and interpret the obtained results (including the sources of uncertainties).
- Use of non-programmable pocket calculators is permitted.
- The time allotted for this test is 60 minutes.

Assessment of work:

The evaluation of the works will be done by a jury made up of 6 academic staff of the "Politehnica" University Bucharest

For the theoretical test, each subject will be scored with a maximum of 10 points.

The evaluation criteria are:

- a. the correctness of the information or the result,
- b. consistency in exposure,
- c. mode of presentation,
- d. the originality of the solution.

The total score will be the sum of the partial scores obtained. Each work will be corrected by at least 2 members of the jury. If the score difference between the 2 corrections is at least 2 points, an overcorrection will be performed by another member of the jury.

The experimental test with the imposed theme will be judged by 2 members of the jury each, the maximum number of points that can be awarded being 20.

The evaluation criteria for the experimental test with the imposed theme are:

- a. Theoretically correct presentation of the process (physical phenomenon) studied.
- b. How to choose the necessary tools and make the experimental setup
- c. The manner of presentation and execution of the stages of the work.
- d. How to process the experimental data and specify the sources of errors.

The final score of each competitor is made up of the sum of the scores obtained in the 2 tests.

The competitor with the highest number of points is declared the winner. Three prizes will be handed out in a festive setting. The photos of the winners, together with a brief presentation of them, will be displayed, with their consent, on the contest website.

Sections of the contest

The competition will be held in two sections.

Section I: It is addressed to students from the first, second and third years of study who have only one general Physics course in their program or have completed only the first semester of the physics course that also contains elements of advanced physics (Physics I).

Section II: It is addressed to students who have advanced knowledge in the discipline of Physics.

The theme for the contest is presented in the attached files.

Additional Information

Contact persons for registration and additional information

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