 

Skills Comp

Skills Slovakia - Electronics

General Rules and Guidelines of the Competition

Organizer

The organizer of the project SkillsComp is Štátny inštitút odborného vzdelávania v Bratislave (the State Institute of Vocational Education in Bratislava).

The institute cooperates with various stakeholders from the education sector and industrial sector.

The institute organizes the project SkillsComp as part of its mission to support the quality and attractiveness of vocational education and training in Slovakia.

Subject and objectives

The competition is organized by Skills Slovakia, a organization that promotes vocational education and training in the country.

The project SkillsComp is part of the European Skills Competitions. SkillsComp aims to showcase the excellence and professionalism of young people in electronics and to inspire them to develop their skills and talents.

The competition is important for the development of the electronics sector in Slovakia and Europe. It provides an opportunity for students to showcase their skills and achievements, and to benchmark themselves against their peers from other countries. It also motivates them to improve their knowledge and competences, and to pursue lifelong learning in electronics.

One of the goals of the competition is to select the best candidates to represent Slovakia in the international events of WorldSkills and EuroSkills. Students from different countries compete in various skill categories, including electronics. ZENIT in electronics is the Slovak equivalent of these prestigious events, and it serves as a qualification platform for the national team. By participating in ZENIT in electronics, students have the chance to demonstrate their excellence and to challenge themselves on a global level.

Competitors

The competition is open to students of vocational secondary school and vocational industrial schools, who are not 20 years old on day of the competition finals.

The competitor compete as individuals.

Each competitor have to prove proficiency in different areas electronic industry. Example of these areas are:

* Underlying theory
* Digital circuits
* Analog circuits
* Power electronics
* Embedded electronics
* Soldering skill
* Ability to use measurement equipment

*Competition categories*

The competition is divided into two categories based on the level of education of the participants.

* Category A is for students who are in their third or fourth year of study
* Category B is for students who are in their first or second year of study.

The projects submitted by each category will be evaluated separately and awarded prizes accordingly.

Evaluation commitee

The evaluation committee is responsible for judging the performance and quality of the participants' projects.

The committee consists of five members:

* the chairman of the evaluation committee
* four additional experts in the field of electronics.

The chairman of the evaluation committee is appointed by the organizer of the competition and has the final authority on all matters related to the evaluation process.

The four additional experts are selected from different institutions or companies with relevant experience and expertise.

The evaluation committee members are impartial and independent, and they follow the criteria and procedures specified in the technical provision.

The course of competition

 To ensure a fair environment for all participants, our electronics competition is governed by a comprehensive set of technical provisions and rules. Each participant is required to adhere to these guidelines to maintain the integrity and spirit of the competition.

Technical Provision

*Materials:*

All competitors will be provided with a standard kit of electronic components. This kit includes all necessary components to complete assigments as defined.

*Workspace:*

Each participant will be allocated a designated workspace. The workspaces are designed to ensure safety and to provide ample room for project development.

*Software and Computers:*

Participant should bring their own computers with pre-installed software for circuit design and simulation (such as Kicad/EAGLE, LTSpice). Participants are encouraged to familiarize themselves with these tools prior to the competition.

*Equipment:*

Participants are responsible for bringing their own additional tools and consumables, such as:

* soldering iron (required)
* hot air soldering station
* multimeter (required)
* pliers (required)
* solder (required)
* flux (required)
* calculator (required)
* pen (required)
* pencil (required)

These tools are pre-approved by the competition organizers to ensure safety and compliance with the venue regulations.

A list of other pre-approved tools for each assigment will be available in a separate document. Participants should check this document before using any other tools during the event.

*Evaluation equipment:*

The committee will provide the necessary equipment for testing and demonstrating the projects, such as power supplies, oscilloscopes, signal generators, etc.

The committee will not rely on the participants‘ own equipment for evaluation purposes.

Competition Rules

*Project Guidelines:*

Projects must align with the competition’s theme and objectives, which will be announced at the beginning of the event. All projects should demonstrate creativity, technical proficiency, and practical application.

*Language Requirements:*

Participants who qualify for the national round must submit their projects/tests in Slovak language. Projects/tests submitted in any other language will not be accepted or evaluated. Participants are responsible for ensuring the accuracy and clarity of their Slovak language usage.

*Time Limits:*

Participants will be given a fixed amount of time to complete their projects/test. Any work done after the allotted time will not be considered during the judging process.

Participants are expected to stop working on their projects/tests as soon as the time limit is reached. Any attempt to continue working, modify, or improve the projects/tests after the deadline result in disqualification. Participants must submit their projects/tests through the designated platform or defined process before the deadline.

*Safety Regulations:*

Safety is of utmost importance. All participants must follow the provided safety protocols when handling electrical components and tools. Failure to comply with safety regulations may result in disqualification.

*Judging Criteria:*

Participatns will be judged based on proven knowledge, technical accuracy, functionality, and presentation. A panel of judges, comprising industry professionals and educators, will evaluate each participant individually.

The judging criteria, which is available as separate document, outlines the specific requirements and expectations for each project category.

*Team Collaboration:*

Participants compete individually. Collaboration and teamwork are prohibited and may result in disqualification.

Borrowing tools from competitors is permitted, but must be done in a manner that respects the integrity and autonomy of both parties. Borrowers must ask for permission before using any tools that belong to another participant, and must return them promptly and in good condition. Lenders have the right to refuse or revoke their consent at any time, without having to justify their decision. Any disputes or conflicts arising from the borrowing of tools must be reported to the organizers immediately. Failure to comply with these rules may result in disqualification.

*Originality and Plagiarism:*

All work must be original. Plagiarism or the use of pre-made projects will result in immediate disqualification. Participants must be prepared to explain their design process and answer technical questions about their project.

*Use of the Internet:*

To facilitate research and enhance learning, participants are allowed to use the internet during the competition in a designated time and under supervision. Access to online resources, finding datasheets for components may be allowed depending on circumstances. However, participants must adhere to strict guidelines to ensure fairness. Any form of direct copying or plagiarism is strictly prohibited. Competitors are encouraged to use the internet responsibly, leveraging it as a tool for supplementing their knowledge and solving problems independently. Judges may request explanations and justifications for any significant elements sourced online, ensuring that the primary work remains the original effort of the participants. By allowing internet use within these boundaries, the competition aims to reflect real-world engineering practices.

Use of the internet will be monitored and regulated by the competition organizers and volunteers. Any attempt to use the internet outside of these parameters or for inappropriate purposes may result in disqualification. Participants are expected to respect the ethical standards of the competition and refrain from any dishonest or unfair practices.

*External help during assignments:*

Participants are expected to complete the assignments by themselves, without any external help from other parties. This includes supervisors, mentors, peers, or online sources. The only exception is the evaluation committee, which may provide guidance or assistance if needed. The evaluation committee may also designate a person to help with the assignment, if this is required for safety reasons. Participants who are found to have received any unauthorized external help may be disqualified.

Duration of competition

To ensure fairness and avoid travel fatigue, participants are required to arrive at the venue one day before the start of the competition.

During this time, participants will be given a brief introduction and seminar.

They will also have an opportunity to interact with other participants, mentors, and organizers, as well as attend some workshops and seminars on engineering topics.

The competition will take place over 2 full days. The announcement of the results and the award ceremony will take place on the 3rd day, after the judges have completed their evaluation.

| DAY 0 | | |
| --- | --- | --- |
| Start | End |  |
| 19:00 | 21:00 | Introduction and Seminar |
|  | | |
| DAY 1 | | |
| 9:00 | 10:00 | Safety instructions |
| 10:00 | 12:00 | Theoretical assigment |
| 13:00 | 18:00 | Complex project assigment |
|  | | |
| DAY 2 | | |
| 8:00 | 12:00 | Practical assigment |
| 13:00 | 18:00 | Continuation of Practical assigment |
|  | | |
| DAY 3 | | |
| 8:00 | 11:00 | Excursion of a company in technical field |
| 11:00 | 12:00 | Evaluation ceremony and awards |

Evaluation

The participants will be challenged with three different assignments that cover various aspects of engineering:

1. Theory (30 points):

A written test that assesses the participants' knowledge of electronics and circuits.

1. Complex project (40 points):

Task that requires the participants to design and implement a functional system. Participants will get document with sub-tasks, that will help them navigate thru design process. Each sub-task is assigned with detemined number of points. Output of this project is circuit build using predefined components, realized on breadboard.

1. PCB design and practical part (80 points):
   1. An individual task that involves designing a printed circuit board (PCB) using a software tool and then soldering the components on the board
   2. Etching the PCB design (photolitography, design printed from Kicad/Eagle)
   3. Soldering the components

Practical part does have point assigned to these criteria:

* PCB design, adhesion to defined rules and good practices (20 points)
* Functionality (40 points)
* Soldering quality (15 points)
* Foreing object debris(FOD)/cleaningless of final product (15 point)

PCB design, Soldering quality, FOD/Cleaningless practical part is subject to subjective opinion of members of commitee

The evaluation of the PCB design, soldering quality, FOD/cleanliness practical part is based on the expert judgment of the committee members, who compare the designs to each other, and reach a consensus decision after considering all the relevant criteria.

The difficulty level of the assignments may vary depending on the category of the competitors. The committee reserves the right to adjust the difficulty level according to the number and quality of the participants in each category. The participants are expected to follow the instructions and complete the assignments according to the given specifications and standards.

The scores from each assignment will be combined to determine the overall ranking of the participants.

In case of a tie in the total score, the contestant who completed the earlier (sum time of all assigments) will be declared the winner.

AWARDS

The participants will receive certificates of participation in the competition. The first five places in each category (A and B) will also receive diplomas for their outstanding performance. The first three places in each category will be awarded with prizes sponsored by the organizers, partners and sponsors. The best participant in each category will be nominated to represent Slovakia at the EuroSkills competition.

License agreement

By registering for the competition, the contestant gives the State Institute of Vocational Education with registered office Bellova 54/A, 837 63 Bratislava, IČO 17314852 (hereinafter referred to as "ŠIOV") in accordance with § 65 and related Act no. 185/2015 Coll. of the Copyright Act, as amended (hereinafter referred to as the "Copyright Act") consent (license) to use the work submitted/submitted to the competition. Consent to the use of the work is granted in full in accordance with § 19 par. 4 of the Copyright Act, i.e. to use the work for the purposes of the Competition, including publication of the work at the national and international level for the purposes of the Competition. Consent to the use of the work is provided to an unlimited extent with the effect of signing the application for the Competition, free of charge.

GDPR Consent

Organizer the data controller of your personal data that you provide to us when you register and participate in project SkillComp. We process your personal data for the purposes of organizing, managing and evaluating the competition, as well as for promoting the competition and its results. We respect your privacy and rights under GDPR, and we ask for your consent to process your personal data for these purposes.

By signing this form, you agree that we may collect, store, use, disclose, transfer and delete your personal data, such as your name, email, phone number, address, photo, video, performance, score, rank, feedback, etc., for the purposes of:

* Registering you as a competitor and verifying your eligibility and identity;
* Communicating with you about the competition, such as sending you information, updates, reminders, instructions, invitations, etc.;
* Conducting the competition, such as assigning you to a category, group, stage, etc., and providing you with the necessary equipment, facilities, services, etc.;
* Evaluating your performance and determining your score, rank, award, etc., by using automated or manual methods, such as judges, jury, audience, etc.;
* Publishing and announcing the results of the competition, such as displaying your name, photo, video, performance, score, rank, award, etc., on our website, social media, newsletter, press release, etc.;
* Promoting the competition and its participants, such as featuring your name, photo, video, performance, score, rank, award, etc., on our website, social media, newsletter, press release, etc., and allowing our sponsors, partners, media, etc., to do the same;
* Improving the quality and experience of the competition, such as conducting surveys, research, analysis, etc., and using your feedback, suggestions, complaints, etc.;
* Complying with our legal obligations, such as reporting, auditing, accounting, etc., and responding to requests from authorities, courts, etc.

You have the right to withdraw your consent at any time, without affecting the lawfulness of processing based on consent before its withdrawal. You also have the right to access, rectify, erase, restrict, port and object to the processing of your personal data, as well as to lodge a complaint with a supervisory authority, in accordance with GDPR. You can exercise your rights by contacting us at [EMAIL] or [PHONE].

We will retain your personal data for as long as necessary for the purposes of the competition, or as required by law. We will ensure that your personal data is processed in a secure and confidential manner, and that it is not transferred to third countries or international organizations that do not provide an adequate level of protection, unless appropriate safeguards are in place, or you have given your explicit consent.

Please read this form carefully and sign it below to indicate your consent. If you have any questions or concerns, please do not hesitate to contact us.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_