IEIC 2026 GUIDEBOOK

(INTERNATIONAL ELECTROMEDICAL INNOVATION COMPETITION)

Next Generation Healthcare through IntelligentBiosignal, Connected Health, and Advanced Life Support

I. INTRODUCTION

Electromedical Engineering is a field that plays a vital role in modern healthcare.
Technological advancements in this sector happen dynamically and quickly, creating an urgent need for skilled electromedical technicians. Their presence is crucial in every aspect of developing healthcare devices, from managing electrical systems, designing computer-based software, to developing complex medical instrumentation systems. The fierce competition among medical equipment manufacturers drives continuous innovation, resulting in healthcare devices with ever-improving quality standards. This situation causes medical technology to evolve very rapidly, and in just a few months, various healthcare devices have already
undergone significant updates to meet the demands of the times.

Bina Trada Polytechnic Semarang is committed to supporting the development of students' potential through education, creativity, and innovation. The rapid advancement of health technology encourages students, especially in the field of Biomedical Engineering, to come up with innovative ideas and works that meet the needs of the healthcare sector.

To support this, an innovation competition is held as a platform for students to
develop ideas, boost creativity, and apply the knowledge they've gained during their studies. This activity is expected to provide experience while also encouraging the creation of useful innovations in biomedical engineering that contribute to the development of health technology.

The International Electromedical Innovation Competition has taken the big theme “Next Generation Healthcare through Intelligent Biosignal, Connected Health, and Advanced Life Support,” reflecting the spirit of promoting the development of
electromedical technology to support more innovative, integrated, and high-quality healthcare services. This theme highlights the importance of smart utilization of
biosignals, the implementation of connected health technology, and the development of increasingly advanced life support systems to meet future healthcare

This activity features three main competition categories covering Intelligent Biosignal, Connected Health, and Advanced Life Support. The competition aims to be a platform to develop various innovations in the field of instrumentation and biomedical technology, while also encouraging participants to come up with solutions to different problems in healthcare services.

Besides being a competition, this event also gives participants the chance to make the most of their potential and creativity, broaden their knowledge and insights in
health technology, and contribute to creating innovations that can support improving healthcare quality and community well-being.

As for the Champion Prizes in the IEIC 2026 event, they are as follows:

a. IT Healthcare Category:
- 1st Place IT Healthcare: Medal + Development Fund Rp. 1,500,000 + 1st Place Certificate, Promoter Certificate, Trophy.
- 2nd Place IT Healthcare: Medal + Development Fund Rp. 1,000,000 + 2nd Place Certificate, Promoter Certificate, Trophy.
- 3rd Place IT Healthcare: Medal + Development Fund Rp. 750,000 + 3rd Place Certificate, Promoter Certificate, Trophy.

b. Categories of Biomedical Signals:
- IT Healthcare 1st Place: Medal + Development Fund Rp. 1,500,000.00 + 1st Place Certificate, Promoter Certificate, Trophy.
- IT Healthcare 2nd Place: Medal + Development Fund Rp. 1,000,000.00 + 2nd Place Certificate, Promoter Certificate, Trophy.
- IT Healthcare 3rd Place: Medal + Development Fund Rp. 750,000.00 + 3rd Place Certificate, Promoter Certificate, Trophy.

c. Life Support Category:
- 1st Place IT Healthcare: Medal + Development Fund Rp. 1,500,000 + 1st Place Certificate, Promoter Certificate, Trophy.
- 2nd Place IT Healthcare: Medal + Development Fund Rp. 1,000,000 + 2nd Place Certificate, Promoter Certificate, Trophy.
- 3rd Place IT Healthcare: Medal + Development Fund Rp. 750,000 + 3rd Place Certificate, Promoter Certificate, Trophy.

As for the Champion Prizes in the IEIC 2026 event, they are as follows:

1. Overall Champion IEIC 2026
   Rotating overall champion trophy IEIC + Development Fund of IDR 3,000,000.00 + Overall Champion Certificate + Institution Certificate..

2. Champion of the Best System IEIC 2026
   IEIC Overall Champion Rotating Trophy + Development Fund Rp. 1,000,000.00 + Overall Champion Certificate + Institution Certificate..

3. Champion of Best Design IEIC 2026
   IEIC rotating overall champion trophy + Development Fund IDR 1,000,000.00 + Overall Champion Certificate + Institution Certificate..

NOTE : All participants who have taken part in this competition are entitled to receive a certificate as participants. Those who make it to the top 9 will get a top 9 certificate.

II. Activity Objectives

A. General Objective

To provide a platform for exchanging knowledge and experiences among practitioners, academics, and students across Indonesia in the field of electronics and Electro-medical Technology.

B. Specific Goal

- Foster and develop a spirit of research and a culture of competition among Indonesian students.
- Encourage the emergence of creative and innovative ideas from the younger generation in addressing health issues in Indonesia.
- Prepare Human Resources (HR), especially students, to be excellent and competent in supporting the creation of a better quality of life for society.
- Promote Educational Institutions, especially the Department of Electro-Medical Technology, as research- and technology-based education centers that make a real contribution.

III. Participant Requirements IEIC 2026

(International Electromedical Innovation Competition)

1. Participant RequirementsEIC (Electromedical Innovation Competition)

- Participants of IEIC 2026 are groups of students who are actively and officially enrolled in Diploma, STR, and Bachelor's programs at public or private universities in Indonesia and abroad.
- Proposing students can come from different study programs or from the same study program, depending on the activity field and topic to be carried out.
- Each portfolio is required to be supervised by one lecturer/promoter.
- Participants must still be students at the time of the grand final Battle.
- Payments should be made through Bank Syariah Indonesia to account number 4565656444 under the name DPD IKATEMI JAWA TENGAH, amounting to: Competition Registration for EIC (Electromedical Innovation Competition (EIC)) Rp. 1,500,000 with the subject "Proof of Transfer for IEIC 2026 EIC Competition Payment".
- Confirm your payment (include a photo of the payment receipt) via WhatsApp to the Committee, Risma Selmunatri (0822 3619 4426) and wait for the confirmation reply.
- Each team consists of 3 (three) people.
- Each team is required to fill out the Google form listed in the registration flow at [https://bit.ly/pendaftaranIEIC2026].
- Participants must send a video of their tool without editing in mp4 format and submit it together with the portfolio manuscript in pdf format via the Google form link.
- The submitted portfolio manuscript must be your own work and has never won a similar competition elsewhere.
- Each participant will receive a certificate of appreciation (participant certificate and winner certificate).

- Each supervising lecturer will receive a certificate.
- The portfolio softfile should be created in PDF format and the equipment video should be made in mp4 format with the file name IEIC 2026_EIC_Competition Category_University Name_Title (the first three words of the title). Example: IEIC 2026_EIC_IT HEALTH CARE_POLITEKNIK BINA TRADA SEMARANG_DESIGN BUILD ELECTROCARDIOGRAPH
- Abstracts must be submitted via the Google Form provided before the specified deadline, running from September 28 to October 27, 2026)
- Portfolio manuscripts and device videos (unedited) must be submitted via the Google Form before the specified deadline, running from November 1 to November 4, 2026.
- Following the abstract submission, the results of the abstract selection will be announced. Qualified participants will then proceed to the presentation stage, which will be evaluated online by the jury to select the top 9 teams (3 teams from each category).Innovation Fair 2026 Requirements
- The participants of IEIC 2026 are groups of students who are actively and officially
  enrolled in Diploma, STR, and Bachelor's programs at public or private universities in Indonesia and abroad. The proposing
- students can come from different study programs or from the same study program, depending on the activity field and the topic that will be carried out.
- Participants must still be students at the time of the Electromedical Innovation Fair.
- The decoration and arrangement of the booth are entirely the responsibility of each team occupying the booth.
- Each booth/exhibition can have a maximum of 2-3 people.
  Each booth (1 representative) is required to fill out the Google form listed in the registration flow at https://tinyurl.com/innovationfair2026

- Participants must send photos or images of the works to be exhibited (up to 3 works) and submit them through the Registration Form.
- Exhibition Work Requirements:
    1. The work can be a device prototype, model, software/application, or research results in the field of health technology/biomedicine.
    2. The work must be functional and can be demonstrated to visitors.
    3. The work should not contain elements of SARA (ethnic, religious, racial issues), plagiarism, or violate someone else's intellectual property rights.
    4. The committee has the right to disqualify works that are considered to not meet the criteria or are not in line with the event's theme.
- The works displayed must be original creations and have never won similar competitions elsewhere.
- Each participant will receive a certificate of appreciation (participant and winner certificates).
- Example: IEIC 2026_ELECTROMEDICAL INNOVATION FAIR_POLITEKNIK BINA TRADA SEMARANG_BUILD ELECTROCARDIOGRAPH
- Exhibition requirements are collected in a Google form that must be submitted before the deadline (September 28-October 27, 2026, at 11:59 PM WIB) accordingly
- the category of each competition participated in.
- After collecting the tools that will be exhibited, a drawing will be held
- booth number according to the time that has been set, which is on (November 13, 2026).
- The Innovation Fair will be held OFFLINE on November 14, 2026
- located at MG. Setos Hotel Semarang

TECHNICAL RULES FOR PRESENTATION ELECTROMEDICAL INNOVATION COMPETITION 2026

1. The participants consist of 3 people and are required to use English
2. .Participants are required to be present 10 minutes before the event starts.
3. Participants are allowed to wear a sponsorship jersey but must still use identifiers for their campus (liketheir alma mater or campus logo). If participants don't have a sponsorship jersey, they are required to wear neat, polite, collared clothes and use their campus alma mater.
4. Participants are required to turn on their cameras during the activities
5. The participant brings the equipment being competed with into the mini studio.
6. Each team is required to make a presentation according to the content of the written work that has been created in the form of a PowerPoint (maximum of 8 slides including the cover and closing slide).
7. Participants must provide a studio for the presentation as specified. (the mini studio layout is attached at the very end)
8. Presentation materials should be in PowerPoint format: CATEGORY_NAME TEAM_NAME INSTITUTION. They must be submitted through the Registration Form before the deadline, which is from September 28 to October 27, 2026, at 11:59 PM WIB.
9. Supervisors/Promoters are not allowed to help during the presentation.
10. The presentation order is based on the sequence already determined by the committee (Random).
11. The total presentation time is a maximum of 30 minutes, with the details as follows:
    a. 20 minutes of presentation and tool demo.
    b. 10-minute Q&A session.
    c. Judge 1: giving questions and each team answers the questions for a maximum of 3 minutes. Judge 2: giving questions and each team answers the questions for a maximum of 3 minutes.
12. Things that need to be presented:
    a. Definition of a tool.
    b. How the tool works.
    c. Advantages of the tool.
    d. Benefits of the tool.
    e. The circuit system being used.
    f. Other things besides the above.
13. The judges' decisions and the committee's rules are final.

TECHNICAL REGULATIONS FOR THE BATTLE ELECTROMEDICAL INNOVATION COMPETITION 2026

1. The participants consist of 3 people with 1 supervising lecturer.
2. Participants are required to arrive 10 minutes before the event starts.
3. Participants are allowed to wear sponsored jerseys but must still use identifiers for each campus (like the alma mater or campus logo). If participants do not have a sponsored jersey, they are
4. required to wear neat, polite clothing with a collar and include their campus alma mater..
5. Participants are required to turn on their cameras during the activity.
6. Participants prepare the tools being competed with to bring to the mini studio.
7. Participants prepare the mini studio that has been designated by the committee, like the example on the last page.
8. Advisors aren't allowed to help during the battle.
9. The battle order number is based on the order number that was determined during the Technical Meeting.
10. Total battle time per category is 60 minutes, with the details:Brieifing Teknis Battle 5 minutes
    a. Team A presentation (5 minutes), Tool demo (5 minutes), Judges' questions (2 minutes), Answers (3 minutes), Question from either team B or team C for team A (1 minute), Answers (2 minutes)
    b. The details above apply up to team C.
    c. Closing and brief comments from the judges (1 minute)
11. One battle batch consists of 3 teams (Team A, B, C) from the same category.
12. Before the battle, participants are given time to study the opponent's equipment with the limitation of only understanding the SOP and the general system of the equipment while the opponent presents and shows a video of their equipment. (online during the Zoom session).
13. The judges' decisions and the committee's rules are final.

ASSESSMENT CATEGORY ELECTROMEDICAL INNOVATION COMPETITION 2026

1. EIC (Electromedical Innovation Competition) Assessment

Stage I: Presentation and Assessment of Portfolio, Abstract, and Innovation Tool Video without editing (Online)

a. Presentation Assessment

- Content
  - Focused Content (The delivery of material stays on topic or content about the tools and the theory behind them)
  - Logic (The background of the problem underlying the creation of the tool and speed problem-solving of the tool that has been made)
  - Clear Message (The material structure is clear and can be easily understood by the audience)
- Speaking
  - Clear (Intonasi dan volume suara baik dan jelas)
  - Correct (Menggunakan bahasa Inggris yang baik dan benar)
  - Fluent (Kelancaran penyampaian presentasi)
- Performance
  - Gesture (Bahasa tubuh saat presentasi)
  - Expression (Ekspresi gerak dan wajah ketika penyampaian materi)
  - Equipment (Pemanfaatan peralatan yang mendukung saat penyampaian materi)

ASSESSMENT CATEGORY ELECTROMEDICAL INNOVATION COMPETITION 2026

- Portfolio Assessment
  - Novelty / originality (Is there any new creative element or significant development?)
  - Benefits / relevance (Explanation of whether the latest tool/innovation is genuinely useful.)
  - Scalability / sustainability (Is the tool easy to scale and adopt by the community and sustainable?)
  - Documentation and evidence of work (The portfolio should be complete: prototype photos, test data, user feedback, and how neat and systematic the presentation is.)
  - Technical skills and implementation (Does the innovation work technically; specifications and how the tool works are explained well.)
  - Relevance to the Theme (The submitted portfolio matches the competition theme)
- Abstract
  - Clear and informative title: A title that reflects the core of the innovation.
  - Clear objectives and problem statement: What problem are you trying to solve? Why is it important?
  - Briefly described methods/innovation/prototype: How did you solve the problem?
  - Key results or tangible benefits: What has been achieved (e.g., testing, efficiency, successful prototype, usage)
  - Implications or potential contributions: Why is this innovation important for the future? Scalability, sustainability, real-world applications.
  - Formal, concise, and plagiarism-free language: The abstract should be well-written, following spelling and style guidelines.
  - Relevance to the competition theme: The abstract should show that your innovation is relevant to the theme set by the organizers.

b. Innovation tool video without editing

- Duration according to the rules: minimum 1 minute, maximum 2 minutes.
- Using English is allowed.
- Interesting and clear opening: The title, team, institution, and tool/innovation are introduced well.
- Demonstration of the tool/innovation: The tool or prototype is shown functioning in real life or simulation — how to use it, the output, advantages compared to existing ones.
- Clear narration: Explanation about the problem, the solution you made, how the tool works, results obtained, and who benefits.
- Good visuals & audio: Images/prototype are clear, shooting is neat, sound is clear.

Stage II: Equipment Assessment (ONLINE via Live Zoom)

- SOP
- Feasibility and Suitability
- Design

Stage III: Battle Assessment (ONLINE Via Live Zoom)

- Participant Insights
- Tool Benefits
- Instrument Performance

2. Best System and Best Design Evaluation

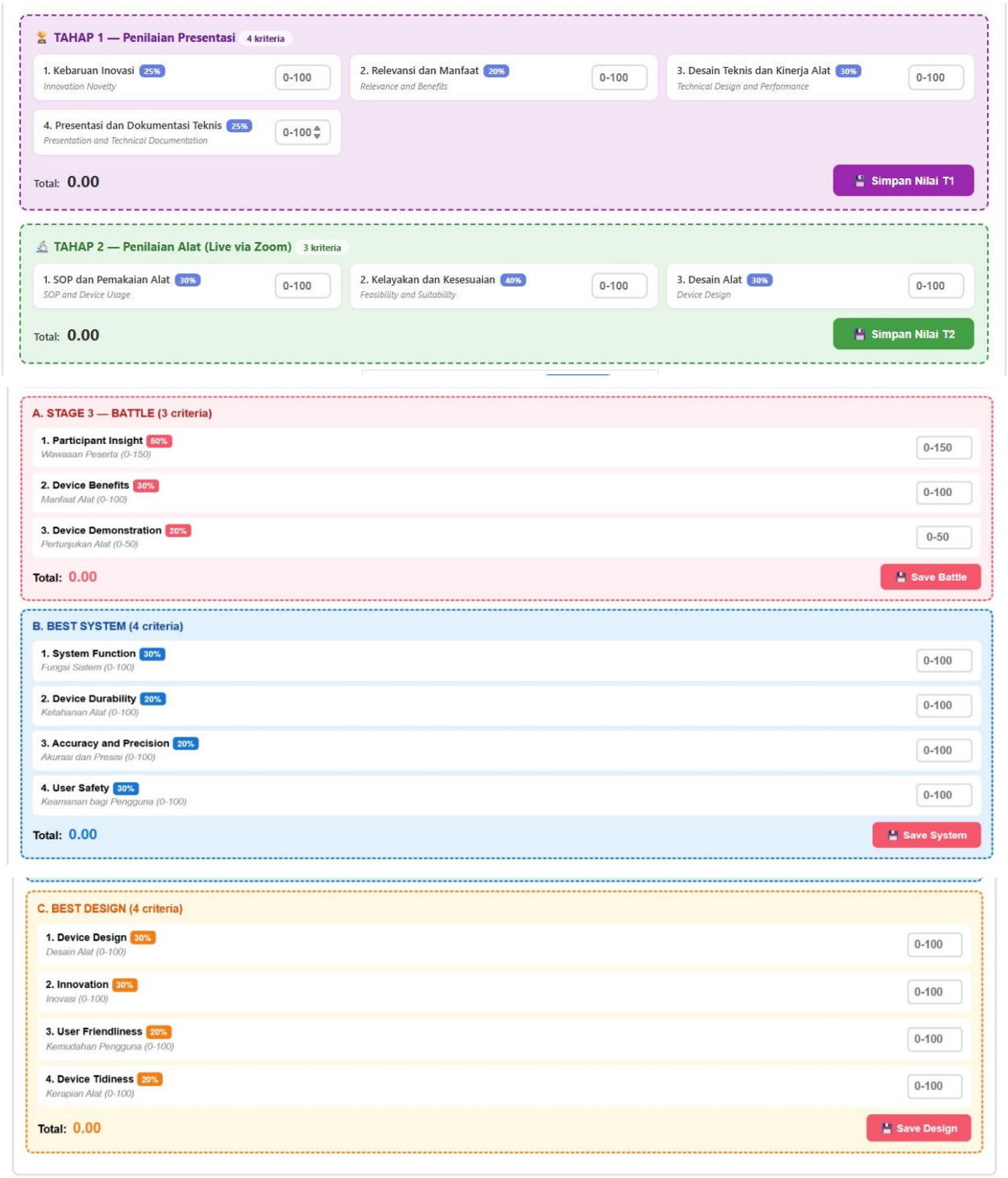
a. Best System

- System Functions
- Product durability
- Accuracy and precision
- Safety

b. Best Design

- Design
- Innovation
- Ease of Use
- Neatness

Design Innovation Ease of Use Neatness



COMPETITION EVENT VENUE

Innovation Fair



Address: Jl. Petempen No. 294, Kembangsari, Central Semarang District, Semarang City, Central Java 50133 (connected to the SETOS / Semarang Town Square area).

(OFLINE)

Tool Battle



Jl. Sambiroto Raya No.64 block D, Sambiroto, Tembalang District, Semarang City, Central Java 50276

(ONLINE)

Click or Scan this QR code for the Website and Registration!!

Registrasi

information

https://ieic-Global.com

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Mini Studio for Presentations and EIC Battles

