



Connecting Students with Industry Professionals and IEEE Leaders



## Student Paper Contest Guidelines

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### A. Purpose

The IEEE Region 1 Student Paper Contest offers the undergraduate IEEE student member opportunities to exercise and improve both written and verbal communication skills. Throughout an engineer's career, he/she will be constantly called upon to communicate ideas to others. Researching, writing, and presenting a paper provides a student with invaluable early experience in expressing ideas related to engineering. Since the paper contest's primary function is to improve the engineering student's communicative skills, no student should be discouraged from entering the contest due to a false requirement of technical sophistication.

### B. Eligibility

1. The entrant must be an undergraduate student at a school in the IEEE Region 1 at which there is an IEEE Student Branch at the time of entry and presentation at the Branch contest.
2. A Student must complete and submit an application for membership in IEEE prior to entry in the Branch Contest.
3. An entrant may collaborate writing a paper with additional students, all whom meet the above criteria.

### C. Number of Entries

1. There shall be no limit of entries in the local Branch contest. If there is only one entry, the Counselor may declare the author submitting the paper the Branch winner.
2. Each Branch normally enters the first place winning paper in the next level contest. More submissions from a Branch may be permitted at the discretion of the paper contest chair.
3. No paper may be entered in the Area or Regional contest without the prior approval and certification of the Branch Counselor.

#### D. Prizes

1. The prize money are 

First Place	\$800
Second Place	\$500
Third Place	\$200
2. Co-authors shall share equally in the allocation of cash awards.

#### E. Subject Matter

1. Papers should cover technical, engineering, management, or societal aspects of subjects reasonably within or related to the areas with which the author is familiar, either from courses, hobbies, summer work, or other similar experiences.
2. The work need not be original in content since the primary function of the Student prize paper contest is to improve the student's communication skills. The work should, however, be original in treatment and concise in coverage of the author's contribution to the subject.

#### F. Written Preparation

1. All papers must be typewritten, double-spaced on one side only of eight and one-half by eleven-inch paper. An equation or symbol that cannot be typed may be written in.
2. The pages of the paper must be numbered consecutively. The Introduction, Body, Conclusion, Tables, and Diagrams may not exceed 15 pages while the above sections with the Appendices may not exceed 20 pages.
3. In general, the contents of a student prize paper shall be organized as follows:
  - (a) **Title page:** On the title page, only the title of the paper should appear. The title should consist of the minimum number of key words necessary to portray accurately the contents of the paper. Reader interest is stimulated by a well-chosen title. The author's name must **NOT** appear on the title page, nor should any other persons or schools.
  - (b) **Table of Contents:** The table of contents should consist of a list of the parts of the paper and the page numbers, in order in which they occur.
  - (c) **Abstract:** The abstract should not describe the paper, but should give, in brief, the essential facts of its contents; for example, a brief of the problem or objective and a concise summary of the results or conclusion, touching upon methods or other details only if they are unique or if they are of some particular significance. The abstract should be no longer than 100 words.
  - (d) **Introduction:** The introductions should lead to the development of the subject so that the reader may obtain a clear understanding of the significance of the paper or article prepared. This can often be done by briefly giving the state of the art as background and then by bringing out the added advantages of the method of approach and emphasizing the importance of the results or conclusions.
  - (e) **Body:** To assist the judges in maintaining objectivity, all mention of the author's name and school should be restricted to a single introductory page. Thus, no mention of the author's name or school should be made in the article. Any references to the author's school should read "the university" without giving the actual name. The main argument of the subject is carried out in the body of the paper, complete with supporting data. The argument should proceed in a logical sequence according to a

prepared outline. The writing should be in the third person. Support data and results can be presented most effectively as curves, charts, or tables.

- (f) Standard graphical symbols and abbreviations should be used on all drawings. (Ref. "Graphic Symbols for Electrical and Electronic Diagrams," IEEE STD 315.) Well-known abbreviations may be used in the text but should be defined where used the first time followed by the abbreviation in parentheses. Generally the use of abbreviations should be confined to tables and illustrations. Illustrations and tables should supplement, not duplicate, text materials; likewise, they should complement, not duplicate each other.
- (g) **Conclusion:** The conclusions are often considered the most important part of a paper. They should be stated concisely in a separate section at the end of the paper. If there are three or more conclusions, better emphasis can be obtained by numbering each conclusion and setting it off in a separate paragraph.
- (h) **Tables:** Generally, each table should be typed on a separate sheet and numbered consecutively using Roman numerals: Table I, Table II. Small tabulations or listings may be made in the text where necessary for continuity. Each table should be titled by giving the brief description as a heading following the table number at the top. Ditto marks should not be used in tabled, but brackets may be used to group information on several lines.
- (i) **Figures:** Figures should be numbered consecutively using Arabic numerals: Figure 1; Figure 2, etc. Three types of figures may be used: photographs, oscillograms, and line drawings. The reading material on illustrations should be kept to a minimum. In short, the reading material should be included in the captions. Portions of the illustrations may be identified by letters and explained in the captions. Whenever feasible, several curves should be combined on the same coordinates. Their identifying letters or numbers should be in clear spaces between cross section lines. Readers generally prefer having the figures distributed through the article, although it is also permissible to bind them together at the end.
- (j) **Appendices:** Detailed mathematical proofs, development of equations and examples, which are subordinate to the main argument in the body of the paper, but not essential to following the argument, should be treated in the appendices. Main equations as they are developed should be numbered consecutively, with the number in the right margin. The equations, figures, and tables in the Appendices should be numbered consecutively following the numbers used for the equations, figures, and tables in the text (such as, if table IV were last in the text, table V would be first in the Appendices.)
- (k) **References:** To enable the reader to consult important works used by the author incidental to the preparation of his manuscript and other related literature which might be helpful, a suitable reference list should be appended. References should be numbered consecutively and should follow the form shown below:

For a periodical: R.N. Hall, "Power Rectifiers and transformers," Proc. IRE, Vol. 40, pp. 1515-1518, November 1952.

For a book: W.A. Edison, "Vacuum Tube Oscillators," John Wiley and Sons, Inc., New York, New York, pp. 170-171, 1948.

- For an article: B. Lawrence, B.H. Weil, and M.H. Graham, "Making online search available in a industrial research environment," Journal of the American Society for Information Science, pp. 364-369, Nov-Dec. 1974.
4. The Contest Chair of each contest shall determine the number of copies of each paper that shall be submitted for entry in the contest.
  5. All Submissions and Advisor Endorsements must use Review Room: (<https://iee-r1-studentconference.myreviewroom.com/>). Please contact the Student Paper Contest Chair for questions on using review room.
  6. Regional winners will receive further information concerning the required format of papers for publication in the *IEEE Potentials Magazine*.

### **G. Oral Presentation**

1. Eight (8) minutes shall be allotted for the oral presentation and four (4) minutes for questions from the audience, however these times are subject to change depending on the number of participants any time prior to the start of the contest. Hereafter, the time allotted to the oral presentation will be referred to as the presentation period, and the time allotted to questions from the audience will be referred to as the discussion period.
2. The paper contest chairman shall arrange a timing system, with the following characteristics:
  - (a) A signal will be given at the beginning of the oral presentation.
  - (b) A first warning signal will be given halfway through the presentation period.
  - (c) A second warning signal will be given two minutes prior to the end of the presentation period.
  - (d) A stop signal will be given at the end of the presentation period.
  - (e) The contest should cease talking when the stop signal is given. Each contest judges may assess a penalty of 5 points to the total oral presentation score for running overtime.
  - (f) The judges will stop the contestant if he/she continues past the stop signal.
  - (g) In addition to the presentation period and the discussion period, the judges shall be given up to five (5) minutes to complete their evaluations between presentations.
3. Individuals asking questions during the discussion period shall state their name and affiliation. If the audience does not present any questions, the judges should do so.
4. Demonstration or display apparatus may not be employed as a part of the contest presentation. Visual aids such as slides, placards, charts, view graph pictures and motion picture films may be used.
5. Each contestant is responsible for making arrangements with the paper contest chair for audio-visual equipment if needed.
6. If any contestant is not present at the time his/her presentation is to begin, the next contestant in the schedule shall present. The skipped contestant will be allowed to present after all other scheduled contestants have presented.

### **H. Judging**

1. Papers will be evaluated and judged on the basis of twenty equally weighted judging criteria. Evaluation and judging is based on 55 percent given to the written presentation and 45 percent weight given to the oral presentation. (Note that 65 percent of the judging criteria is related to the student's written and verbal skills, emphasizing that the paper contest's primary function is to improve an engineering student's communication abilities.) The judging criterion is on the following pages.
2. The contestant's final score will be the sum of each judge's "Total Oral and Written Score." This final score will be the sole determination of rankings unless a tie occurs.
3. In the event of a tie in total score for first, second, or third place, there will be a tiebreaker based on a majority vote of the judges. If there are more than two contestants tied for the same position and a single contestant does not receive a majority of the vote, the contestant with the lowest number of votes will be removed from consideration and the vote retaken. This process will continue until one contestant receives a majority of the votes. All other contestants who were tied will then be considered tied for the next highest ranking, requiring a second tie breaker if necessary.
4. Before any tiebreaker vote, at the judges' discretion they may choose to talk with each of the tied contestants. This will consist of further questions about the contestant's paper and/or presentation and will last no more than five (5) minutes per contestant.

## **I. Rules Discrepancies, Disputes, and Clarifications**

In the event that any discrepancy in the rules arises, any clarification is necessary, or any dispute of the rules is brought up, it will be settled by the sole judgment of the paper contest chair. Any rulings made by the paper contest chair will be considered official and final.

## **Judging Criteria**

1. Paper evaluation consists of two parts: Written (55%) and Oral Presentation (45%).
2. Both written and oral presentation scores consist of total twenty categories that each score between 1 and 10. Accordingly the following guidelines should be helpful:
  - 1 - Maybe some one should suggest that he/she change his/her major.
  - 2 - Did he even think about his point?
  - 3 - Two more tries might have helped.
  - 4 - Needs some polish to smooth the rough spots.
  - 5 - Not bad.
  - 6 - What is expected of someone at this level?
  - 7 - Very Smooth.
  - 8 - The individual must have put special emphasis on the area.
  - 9 - So logical and correct that the words seemed to form in the mind as the contestant spoke them.
  - 10 - What Moses felt on Mt. Sinai?
3. There shall be five (5) to seven (7) judges. The use of the same judges for both the Written and Oral presentations is optional but encouraged.
4. The judges shall be selected to represent a cross section of various disciplines in electrical, electronics and related fields of engineering. The Section and Regional SAC should be called on to assist in the selection of judges at all levels of the paper contest.

- The judges should have a record of experience in written and oral communication of ideas.

**Written Judging Criteria (55%):**

Score each criterion on a 1 to 10 scale. Scores of 2-4 indicate inadequate, 5-7 normal, and 8-9 superior. Scores of 1 and 10 indicate extremes so a solid paper would be a 6.

<b>Written Form 35%</b>		<b>SCORE</b>	
1	Concise, informative Abstract	10	
2	Adequacy of Introduction	10	
3	Logical development and analytical treatment in the body (Delivers on the promise of the introduction)	10	
4	Adequacy of conclusion	10	
5	Compliance with paper contest guidelines on format	10	
6	Clarity and direction in exposition	10	
7	Grammar, spelling, style, and choice of words	10	
Total		70	0

<b>Written Subject Matter 20%</b>		<b>SCORE</b>	
8	Originality of ideas, experimental procedures, processes, designs, results, or conclusion due primarily to this author.	10	
9	Originality of analysis, interpretation restatement of inference based upon the work of others. (If the paper and its contents are entirely the work of the author, enter #8 score into #9).	10	
10	Quality and level of technical social or management content. Appropriateness, Interest & Importance.	10	
11	Factual and technical accuracy	10	
Total		40	0

**Oral Presentation Judging Criteria (45%):**

Score each criterion on a 1 to 10 scale. Scores of 2-4 indicate inadequate, 5-7 normal, and 8-9 superior. Scores of 1 and 10 indicate extremes so a solid paper would be a 6.

<b>Oral Form 30%</b>		<b>SCORE</b>	
12	Organization - has introduction, body and conclusions with transitions between each	10	
13	Logical development	10	
14	Poise, eye contact, platform maners	10	
15	Grammar, fluency, and choice of words	10	
16	Clarity and directness in exposition	10	
17	Use of graphic aids	10	
Total		60	0

<b>Oral Subject Matter 15%</b>		<b>SCORE</b>	
18	Apparent technical and factual accuracy and grasp of the subject	10	
19	Use of examples and analogies	10	
20	Discussion - judges should be prepared to stimulate discussion	10	
Total		30	0