

**Institution of Engineers, Sri Lanka
Undergraduate Inventor of the Year Competition - 2016**

PROCEDURES AND RULES

01. Purpose

- a) To encourage and stimulate interest in undergraduate invention in the area of Engineering.
- b) To provide an opportunity for engineering undergraduates to organize and present their original inventions both orally and via a poster.
- c) To provide a venue for networking within Sri Lanka engineering undergraduate students as well as members of industry and academia.

02. Engineering Projects

“Scientists try to understand how nature works; Engineers create things that never were.” An Engineering invention should state the Engineering goals, the development process and the evaluation of improvements. Engineering projects may include the following:

- a). Define a need or “How can I make this better?”
- b). Develop or establish design criteria (could be more than one)
- c). Do background research and search the literature to see what has already been done or what products already exist that fill a similar need. What makes them good and what makes them weak?
- d). Prepare preliminary designs and a materials list. Consider costs, manufacturing and user requirements.
- e). Build and test a prototype of your best design. Consider reliability, repair and servicing.
- f). Retest and redesign as necessary. Product testing.
- g). Present results.

03. Time and Place of Contest

The Undergraduate invention Competition is held during September annually at IESL Head Quarters.

04. Competition Entry Procedures

- a) Engineering faculties of UOM, UOP, UOR, UOJ, SEUSL & OUSL will be informed of the contest and its rules and procedures each year by the IESL.
- b) To enter the competition, student must be an undergraduate of UOM, UOP, UOR, UOJ, SEUSL & OUSL by 01st May 2016.



- c) Students must submit their inventions to the Deputy Executive Secretary, IESL by 24th June 2016 with abstract, research plan and form U1.
- d) A signed letter from the Department Head verifying the originality of the student's work will be required. The verification letter by the Head of department should objectively set forth the extent to which the student exercised independence and originality and the part the advisor played.
- e) No advisors' names may appear on the paper as co-authors. They may be added later if the paper is submitted for publication.
- f) The final will be held in 08th July 2016 at IESL HQ, No 120/15, Wijerama Mawatha, Colombo 07.

05. Scope of the Competition

- a) The invention can be on any subject directly related to engineering.
- b) The oral portion is limited to fifteen minutes per speaker/ group, with Power Point presentation.
- c) The poster portion will be fifteen minutes and posters must comply with the Poster Presentation Guidelines.
- d) Each inventor will present orally at the beginning of the competition. When they are finished, they will man their posters, during which time the judges can approach them with questions.

06. Project Abstract

Abstracts are limited to a maximum 250 words and must fit within the pre defined area.

The abstract should include the following:

- a) Purpose of the project
- b) Procedure
- c) Data
- d) Conclusions
- e) Practical applications

An abstract must not include acknowledgements or work done by the advisor.

A project abstract is a brief paragraph or two highlighting and/or summarizing the major points or most important ideas about your project. An abstract allows judges to quickly determine the nature and scope of the project.

07. Project Log Book

A project log book is the most treasured piece of work. Accurate and detailed notes make a logical and winning project. Good notes show consistency and thoroughness to the judges and will help when writing the research paper. Data tables are also helpful. They may be a little 'messy' but be sure the quantitative data recorded is accurate and that units are included in the data tables. Make sure you date each entry.



08. Research Paper

A research paper should be prepared and available along with the project log book and any necessary forms or relevant written materials. A research paper helps organize data as well as thoughts. A good paper includes the following sections.

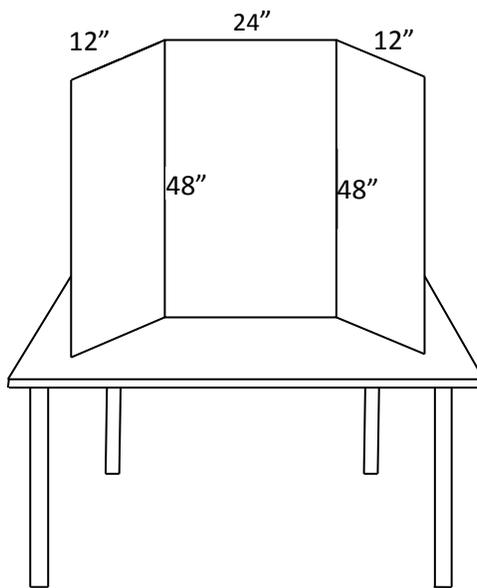
- a) Title Page and Table of Contents: The title page and table of contents allows the Judges to follow the organization of the paper quickly.
- b) Introduction: The introduction sets the scene for the report. The introduction includes the purpose, problem or engineering goals, an explanation of what prompted your research, and what you hoped to achieve.
- c) Materials and Methods: Describe in detail the methodology used to collect data, make observations, design apparatus, etc. The research paper should be detailed enough so that someone would be able to repeat the experiment from the information in paper. Include detailed photographs or drawings of self-designed equipment.
- d) Results: The results include data and analysis. This should include statistics, graphs, pages with raw collected data, etc.
- e) Discussion: This is the essence of the paper.
- f) Conclusions: Briefly summarize results. State findings in respect of the value addition to the society and the possibility of commercial development. Also mention practical applications.
- g) References/Bibliography: Reference list should include any documentation that is not your own (i.e. books, journal articles, websites, etc.)

09. Preparation of Posters

Inventors must follow standard IESL Poster Presentation Guidelines. The inventors must provide the content of their research and illustrations in a size and format suitable for poster display.

It is also suggested that they prepare brief statements of the purpose of their work, their experimental methodology and design, and the major results of their findings and their Illustrations must be simple.





10. Judging Criteria

Judges evaluate and focus on 1) how well you followed the scientific, engineering, or mathematical methodologies; 2) the detail and accuracy of research as documented in the log book; and 3) whether experimental procedures were used in the best possible way. They look at how significant your project is in it's field; how thorough you were, and how much of the experiment thought and design is your own work.

Initially, judges get their information from your board, abstract and research paper to learn what the project is about, but it is the Interview that will be the final determination of your work. Judges applaud those students who can speak freely and confidently about their work.

They want to know if you can determine possible sources of error in your project and how you might apply your findings to the 'real' world. Finally, the judges seek to encourage you in your scientific efforts and your future goals/career in Engineering.

UIY judging criteria (points)

- Creative Ability 30
- Scientific Thought and Engineering Goals 30
- Thoroughness 15
- Skill 15
- Clarity 10

11. Presentation of Awards

Presentation of awards and certificates will be made at the Annual sessions of IESL scheduled to be held on October 2016.

Chairman, UIY 2015/16

