



ENGINEERING INNOVATIVE DESIGN COMPETITION

# ENGINNØVATE



# E-HANDBOOK 2020



**USM** UNIVERSITI  
SAINS  
MALAYSIA

**APEX**<sup>TM</sup>

**BHEPA**  
USM



UNIVERSITY ASSOCIATION, MALAYSIA CHAPTER  
— SINCE 1987 —  
**CAREER FAIR 2020**  
UNIVERSITI SAINS MALAYSIA  
ENGINEERING CAMPUS

**IEM**  
The Institution of Engineers, Malaysia

**Micron**<sup>®</sup>

# INTRODUCTION

Engineering Innovative Design Competition (ENGINNOVATE) is an engineering design competition with an innovation which focuses on original ideas based on tackling real-life problems with engineering knowledge. The purpose of this competition is to promote innovative culture in engineering design work and to churn out the brightest talents for product development, further research, and commercialization. This is the main post-event of Career Fair 2020 in collaboration with IEM-USM Student Section.

The project outcomes of this competition are:

1. To design and realise solutions for complex engineering problems to meet specific needs considering public health and safety, cultural, societal and environmental requirements.
2. To apply knowledge of mathematics, science, and engineering fundamentals to the solution of complex engineering problems.
3. To identify, formulate and solve complex engineering problems by using first principle of mathematics, natural sciences, and engineering sciences.



# EVENT MECHANISM

ENGINEERING INNOVATIVE DESIGN COMPETITION

**ENGINE**⚙️**OVATE**

# EVENT MECHANISM

## GENERAL

1

This competition is an idea-realisation presentation based competition.

2

All students are welcomed to participate in this competition individually or in a team of maximum 3 members.

3

There will be 2 competing rounds, which are preliminary round and final round.

4

MyCSD points will not be provided to the participants if the proposal submitted are impractical.

5

Proposal are to be sent in PDF format to [enginnovate.usm@gmail.com](mailto:enginnovate.usm@gmail.com). Proposals should include the front page.

6

The deadline for the submission of proposals is 26th February 2020.

# PRELIMINARY ROUND

1

All participating teams will have to send in a proposal related to any field of engineering, science and mathematics.

2

Proposals submitted after the deadline given WILL NOT be entertained.

3

The 1st round screening of proposals will be done by USM lecturers.

4

The 2nd round screening of proposals will be done by the panelists from IEM Penang Branch.

5

Six finalists will be selected from the 2nd round screening.

# FINAL ROUND

1

The best SIX proposals from the preliminary round will be shortlisted to enter the final round. Finalists will be notified via email.

2

Finalists will be presenting in front of the judges and also the audience on the 1st April 2020.

3

Finalists are given one (1) week to prepare their presentations. Presentation slides are compulsory. Prototype, simulation(s), research outcome(s) etc. will be given credits.

4

A team of professional engineers from IEM and USM lecturers will be the panelists to evaluate the presentations.

5

3 winners will be selected after the presentation evaluation by the panelists. Winners will receive a certificate accredited by IEM alongside cash prizes.

# RULES AND REGULATIONS

ENGINEERING INNOVATIVE DESIGN COMPETITION

**ENGINNOVATE**



# RULES AND REGULATIONS

## 1.0 CONDITIONS OF PARTICIPATION

- 1.1 This competition is open to every engineering students from any school/faculty of Engineering.
- 1.2 Final year students of any school/faculty of Engineering who are carrying out their final year projects (FYP) are encouraged to join the competition.
- 1.3 Postgraduate and undergraduate students from any school/faculty of Engineering who have projects available in hand or ideas are also encouraged to join the competition.
- 1.4 Students may participate individually or form a team with a maximum number of 3 members.
- 1.5 Participating teams must not change members without prior notice and valid reason. Should there be a change in team members, the committee members should be informed earlier.

## 2.0 REGISTRATION

- 2.1 There will be NO registration fee.



## 3.0 REQUIREMENTS

3.1 For the preliminary round,

3.1.1 There is no restriction on the topic of the proposal. Any innovative ideas, designs or projects including Final Year Project (FYP) are acceptable.

3.1.2 The idea of the project must be original and not plagiarised.

3.1.3 Proposals content MUST NOT contain instigating and sensitive issues involving religion, race etc.

3.1.4 The deadline for the submission of proposals is 26th February 2020.

3.1.5 Late submissions will not be entertained.

3.1.6 Format requirements:

- Proposals should not be more than 1000 words
- Proposals should include Front Cover, Problem Statement, Methodology, Results, Market Survey and Expected Outcome.
- Margins must be set to normal (Top and bottom: 1", Left and right: 1.25")
- Font of text must be Times New Roman.
- Font size must be 12pt. (header and cover page is excluded)
- Line spacing must be set in single.
- The size of pictures, figures, and charts in the proposal must NOT be bigger than half of an A4 paper.

3.1.7 Proposal content:

- Front Cover: A simple front cover consisting of USM and APEX logo, name, matric number, identity card number, year of study and school.
- Problem statement: A brief analysis or summary of the problems identified related to the project, or issue to be addressed by the project. It has to be a precise and point-to-point basis.
- Methodology: The systematic and theoretical analysis of the methods used to identify, select and analyse information applied to have a good understanding on the research problem.
- Market Survey: The precise budget (expected expenses and income), qualitative and quantitative impact on the targeted community and the environment (sustainability).
- Results/Expected outcome: The expected output or conclusion of the project that will be evaluated.

3.2 For the final round,

3.2.1 Participants will be presenting their ideas in front of the judges.

3.2.2 Participants are REQUIRED to wear formal attire.

3.2.3 Presentation must ONLY be done in ENGLISH.

3.2.4 During the presentation, participants are encouraged to bring their prototype, simulation(s), research outcome(s) etc. on 1st April 2020 at USM Engineering Campus. Prototype, simulation(s), research outcome(s) will be given credits.

3.2.5 Participants are only given 10 MINUTES for their presentation, and another 5 minutes will be allocated for Q&A session with the audience and judges.

3.2.6 Participants who are late for their presentation slot for more than 10 minutes without valid reasons or fail to turn up will be automatically disqualified.

Any failure in abiding the rules will result in **DISQUALIFICATION**.

# SCORE SHEET



# SCORE SHEET

## PRELIMINARY ROUND

Assessment will be made based on the following criteria:

**40%**

### IDEA

1. Problem definition
2. User & Customer definition
3. Idea definition
4. Innovation

**40%**

### SOLUTION

1. Technical of framework
2. Engineering applicability
3. Impact towards society
4. Impacts towards environment
5. Economic analysis

**20%**

### PROPOSAL WRITING

1. Organization and formatting of report
2. Grammer, punctuation & spelling
3. Accuracy, clarity & conciseness of writing

# SCORE SHEET

## FINAL ROUND

Judging will be based on the following criteria:

**30%**

### IDEA

1. Problem definition
2. User & customer definition
3. Idea definition
4. Innovation

**30%**

### SOLUTION

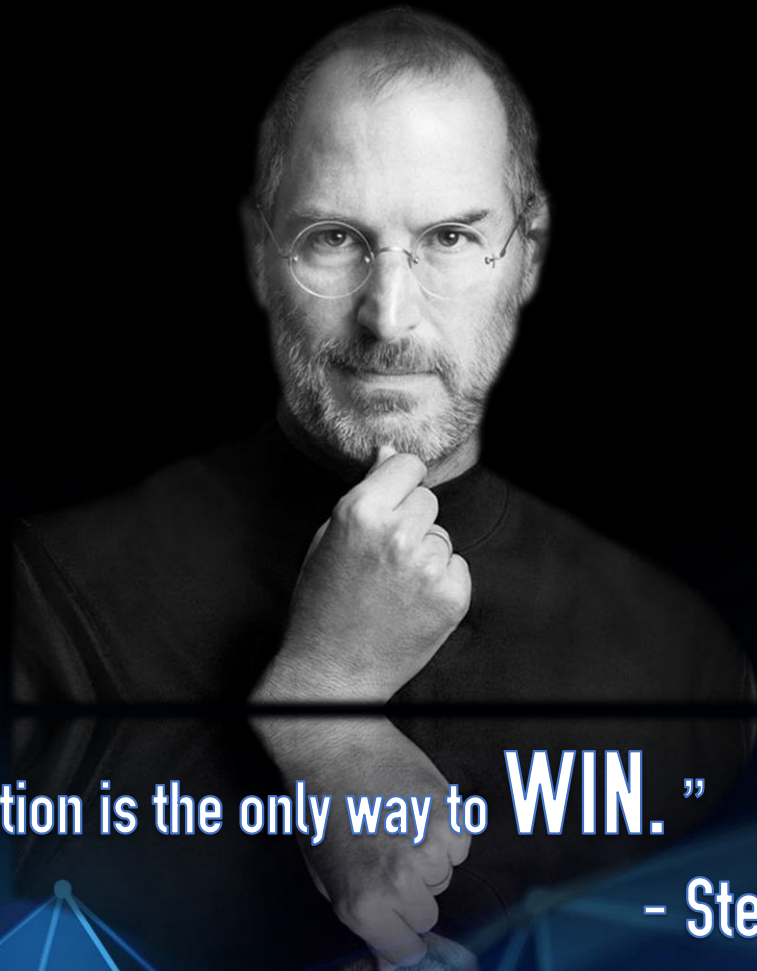
1. Sustainability
2. Engineering applicability
3. Impact towards society
4. Impacts towards environment

**40%**

### PRESENTATION

1. Grammar
2. Slide presentation
3. Eye contact
4. Persuasiveness
5. Q&A

**Judges' decision and discretion are FINAL.**



“ Innovation is the only way to **WIN.** ”

– Steve Jobs

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