

# Open Showcase

Open Showcase during Quark 2017 is a platform where you get to promulgate your projects and models, and make your amazing skills of design and innovation known to the world.

## **Categories:**

- Mechanical and Chemical Engineering
- Electrical, Instrumentation and Computer Science
- Sciences

## **Eligibility**

All students with a valid identity card of their respective educational institutes are eligible to participate in the event.

## **Abstract Submission**

1. Participants should mail their abstracts with the registration number as the subject and the participation category clearly mentioned in the body of the mail. It should preferably be in **'PDF'** the format.
2. Only entries selected based on their abstracts are eligible to be exhibited at Open Showcase, Quark '17. Participants are also required to mention at the beginning of their abstracts if their idea has a prototype/model.

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A brief idea of how the design would be presented (exhibited) during the exhibition should also be included in the abstracts.

3. The abstract should be concise and to the point, and should not exceed three A4 sheets of text typed in Times New Roman font of size 12. This is excluding the first sheet containing the title and the last containing references (if any). The applicants are free to attach images of their model (maximum 3 in no.).
4. The first sheet should only contain title of the project, names of the team members and their respective institutes.
5. The last sheet, following the abstract, may have a list of references –websites, books, journals and so on, which amply support the ideas or solutions implemented/proposed.
6. The information in the abstract should not be very descriptive or vague. It is recommended that vital aspects of the project that require special focus be mentioned as **bold points**.

## General Rules

1. Participants are required to submit a pre-event abstract, in a standard format (as mentioned above) for the screening round. The abstract should be mailed to [devshah960@gmail.com](mailto:devshah960@gmail.com).

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2. Only the participants who are short-listed in the screening round based on judging of the abstracts shall be invited to Quark 2017 for the final round.
3. Qualifying participants will have to make a presentation before a panel of judges explaining the salient points of their idea/innovation.
4. Teams will be given only one hour prior to the competition to set up their model/design at the venue for judging.
5. A detailed report in support of the design and highlighting the important aspects should also be brought. The report will be considered for judging.

## Judging Criteria

The participant will be judged on the following criteria:

- Innovation
- Feasibility and Sustainability
- Cost Effectiveness
- Social Viability
- Discipline
- Project Report

The decision of the judges shall be treated as final and binding on all.

**DISCLAIMER:** The organizers reserve the rights to modify any or all of the event rules as they deem fit. The changes (if any) will be highlighted in the official website and notified to registered participants.

# Paper Presentation

Paper Presentation contest held as part of Quark attracts some of the best minds from all over the country. Participants are invited to present papers spanning various research topics pertaining to the different branches of engineering and science.

## Categories:

1.	Computer Science and Information Technology	[CS]
2.	Electrical and Electronics	[EEE]
3.	Mechanical and Chemical	[Me]/[CHE]
4.	Core Sciences	[SC]
5.	Humanities, Economics and Management	[HEM]

## Round 1

- Online submission of synopsis.
- The synopsis must be formatted in IEEE one column format.

# Paper Presentation

- The Synopsis must contain:
  - Title
  - Authors, Corresponding author
  - Problem definition
  - Solution of the problem defined
  - Abstract
  - Keywords
  - Practical application
  - Summary
  - References
- Participants are required to send their submissions at [devshah960@gmail.com](mailto:devshah960@gmail.com) via email. Please mention the category of paper in the subject of email.
- Abstracts must be in a .pdf format only.
- The minimum page limit for all synopses is two single sided pages. The maximum page limit is 4 pages. Use Times New Roman font, 12 point, 1.5 line spacing. Smaller fonts may be used for figure captions
- Title, author's names, and affiliations should be centered.
- Abstracts should state clearly and concisely the problem, methodology used and central conclusions, and may include figures and graphs.

# Paper Presentation

- Abstract must contain the participant's names along with category code (mentioned in square brackets beside category).
- **Maximum no. of teammates is 3.**
- Most important of all: Any form of plagiarism will lead to immediate disqualification. (We use special purpose software to detect plagiarism)
- Those whose papers have been selected for the final round shall be informed by email within a day of the deadline.

## Round 2

- Teams selected on the basis of the first round will have to give their presentation in Quark 2017.
- Those who are selected for the final round are required to send us a mail at [devshah960@gmail.com](mailto:devshah960@gmail.com). The mail should consist of the following things :
  - Acknowledgement that you are aware of you being selected.
  - Details of all the team members: Names, Departments, Phone numbers, College, etc. Please try to put them in a proper tabular format for our convenience.
  - Image of travel ticket bearing above names.

# Paper Presentation

- The final paper must be formatted in IEEE ONE COLUMN FORMAT.
- Please mail the final paper at [devshah960@gmail.com](mailto:devshah960@gmail.com) with your team id in the subject. Submitting full paper is crucial to confirm your participation in final round.
- For the final round, the participants will have to give their presentation in Microsoft PowerPoint.
- Only picture clippings and graphs may be used.
- Recorded dialogues or movie clippings are not allowed.
- We will provide computer for presentation. The teams will get 9 minutes to present their idea. They will then have 1 minute to wind up.
- This will be followed by a question and answer session by judges and/or students attending the ppt for 3 minutes duration. 15% marks will be deducted for every minute exceeded after 10 minutes.
- The decision of the judges and the organizers shall be final and binding.

# Paper Presentation

## Categories with suggested topics:

- **Computer Science and Information Technology [CS]**
  - Artificial Intelligence
  - Graph Theory
  - Computational Complexity and Language
  - Computer Science and Game Theory
  - Cryptography and Security
  - Data Structures and Algorithms
  - Discrete Mathematics
  - Distributed, Parallel, and Cluster Computing
  - Formal Languages and Automata Theory
  - Computer Graphics
  - Human-Computer Interaction
  - Information Retrieval
  - Multimedia
  - Neural and Evolutionary Computing
  - Operating Systems
  - Compiler and Programming Languages
  - Robotics
  - Social and Information Networks
  - Internet measurement and modelling
  - Wireless networks
  - Mesh, ad hoc and sensor networks
  - Peer-to-peer, overlay and content distribution networks
  - Online social networks
  - Power and energy efficient architectures
  - Processor, memory, interconnect, and storage architectures



# Paper Presentation

- **Chemical [CHE]**

- Multi-phase Flow and Complex Fluids
- Polymer Science, Advance Materials and Membranes
- Catalysis and Chemical Reaction Engineering
- Bio-fuels and Bioengineering
- Conventional and Non-Conventional Energy
- Process Control and Optimization
- Environmental Engineering and Interfacial Phenomena
- Thermodynamics, Molecular Simulation and Nano Sciences
- Chemo metrics
- Inventory and Flow Control in Complex Process Networks
- Natural and Fabricated Nano-materials
- Sustainable Energy Systems
- Mass Transfer and Separations
- Nanoscale Science and Engineering
- Product and Process Systems Engineering
- Novel Reactors
- Manufacturing Science: Behavior and Structure of Polymers and Ceramics
- Interfacial Science and Engineering
- Microscopic Analysis of Solids Handling
- Water resources and Management
- New Modelling Tools
- Lab on a Chip

# Paper Presentation

- **Electronics and Electrical[EEE]**
  - Soft Computing Techniques: Microprocessor and their application
  - Robotics and Automation
  - Fuzzy Control Techniques
  - Green Power: Alternate Energy Sources
  - Wireless Communication Techniques
  - Embedded Systems Design
  - VLSI design
  - Power Systems Analysis
  - Power Markets
  - Power Electronics and Drives
- **Mechanical[ME]**
  - Mechatronics
  - Automobile Engineering and Design
  - Computational Fluid Dynamics & Finite Element Analysis
  - Computer Aided Design & Manufacturing
  - Microprocessor Based IC Engines/ Camless Engines
  - Total Quality Management
  - Genetic Algorithms in Machine Design
  - Aerodynamics
  - Plastic and Composite Manufacturing
  - Manufacturing Technology Management
  - Nano manufacturing
  - MEMS

# Paper Presentation

- **Sciences[SC]**

(Please mention the subcategory in the subject of email)

- Physics
- Chemistry
- Biology
- Maths

- **Humanities, Economics or Management [HEM]**

(Please mention the subcategory in the subject of email)

- Art
- Culture
- Media Ethics
- Nihilism
- Great Depression
- European Monetary Union
- Asian Currency Crisis
- Strategic Planning

# Industrial Process Design

"Design is as much an art as it is a science."  
A shout-out to all creative engineers!

## About

Industrial Design Problem is an event created to test and enhance innovation, technical knowledge and creativity of future engineers.

The participants have to come up with the most economical and feasible solution to practical Industrial problems faced by Engineers.

They will be given 3 problems faced by many chemical industries. They have to choose 1 and provide a feasible solution to that problem.

## Judging Criteria

The participants will be judged on the basis of feasibility and innovation.

## Rules

- The solution has to be presented in the form of a PowerPoint Presentation (.ppt or .pptx).
- Maximum of 4 members per team.

# Industrial Process Design

- Teams can be formed between students from any College.
- Any number of teams can participate from a College.
- Only ONE presentation is allowed per team.
- The preliminary round includes the submission of a solution to one of the given problems in the form of a presentation which should be mailed to [devshah960@gmail.com](mailto:devshah960@gmail.com), with the participants' details (name, College, year/Branch, contact no, email-id) and chosen topic clearly specified in the mail.
- Use of appropriate media content is allowed in the Presentation.
- For the final round, shortlisted participants will be required to explain their presentation for not more than **10 minutes** and be prepared to answer any queries from the judges.
- Care should be taken to ensure that this presentation does not contain any significant deviations from the original presentation submitted for the preliminary round.
- The decision of the judges will be final and binding.

# School Bag

**School Bag** is a mixed bag of events, interactive sessions and workshops/Guest talks, designed for the participation of students of Secondary and Higher Secondary Schools. It has events ranging from education, to arts and fun. The aim of this event is none other than to provide an opportunity for the Secondary and Higher Secondary students to visit BITS Pilani Goa Campus during the technical festival Quark, to explore innovative technical projects and exhibits, and to participate in exciting events. The competition promote education and learning of our young minds and nurture the potential within them.

# School Bag

## EVENTS

### Poster Making Competition

Remember all those awesome structures you used to create with your building blocks set?

In Quark 2017, use your mechanical aptitude to come up with a solution to a basic design problem given on the spot, and present your design using a hand drawn poster. No technical knowledge required, you can use universal symbols (like arrows) and text to get your ideas across.

Category:

A: Classes 8-10

B: Classes 11-12

### Details

- A design based poster-making competition for school children of classes 8-12.
- A simple design problem will be provided on the spot, which can be solved logically using the basic scientific knowledge. No knowledge of technical design required.
- Teams of 1-2, Members of a team must be from the same school, and must be from the same category.
- One team per school for each category.

# School Bag

## Science fair

Science Fair for Secondary and Higher Secondary Students (9th –12th), is an opportunity for students to put on their thinking caps and to present their ideas and innovation.

### Rules:

- Students are required to make a working model or display project on Renewable Energy.
- The school team may be represented by a maximum of three students per exhibit and one escort Science Teacher.
- The exhibit/project may include
  - A working model to explain a concept, principle or a process
  - An indigenous design of a machine/device
  - An innovative/inexpensive design or technique
  - Application of basic principles of Science/technology
  - Scheme/design of a device or machine to reduce the production cost
  - Investigation-based study
- Each school can submit a maximum of three exhibits.



# School Bag

- You are requested to send the names of all team members for each exhibit by [devshah960@gmail.com](mailto:devshah960@gmail.com).
- Each model should be accompanied with a write up consisting of Title, abstract, Introduction, Theory and working. The write-ups may be accompanied by images. The write-ups are to be sent in word format by email.
- The best models get opportunity to be showcased along with national and international Exhibits during Quark 2016 and chance to win exciting prizes.
- **DISCLAIMER:** The organizers reserve the rights to modify any or all of the event rules as they deem fit. The changes (if any) will be highlighted in the official website and notified to registered participants.

# School Bag

## Quiz –ELEMENTARY

### Rounds:

**Physics of the Impossible:** A number of mind boggling, physics ideas given to the participants asking them probable solutions to them, workarounds.

**Dexter's Lab:** The teams need to solve a few problem statements based on one of the labs (biology, chemistry, and physics).

**Whodunit:** Teams have to solve logic-based questions in a fixed time limit (multiple-choice questions). Teams who clear this will be given clues to a crime-solving puzzle and will have to solve it before the other teams do.

### Sections:

Section A= Classes 8-10

Section B= Classes 11-12

### Rules:

- A quiz event, which tests the participant's logical reasoning (LR), analytical skills (AS), scientific aptitude (SA), and awareness of the scientific world.
- Maximum of 3 members per team, with one captain. All members from a team must be from same school and fall into the same category (A or B).
- An on-spot preliminary written test will be conducted (based on LR, AS, SA).
- Subsequent rounds will have marking rounds and eliminations of teams based on marking rules.

# School Bag

## The Quark Debate

A modified Lincoln Douglas format Debate. Get ready to lock horns in verbal combat and stun your opponent in a volley of cogent rebuttals.

**Single Category:** Classes 8-12.

### Rules:

- Teams of 2
- Topic will be given fifteen minutes in advance. Internet facilities will be provided for the duration and topics will be general in nature.
- The first FOR speaker speaks for 3 minutes, followed by a 3-minute speech by the first AGAINST speaker.
- This is followed by a cross-questioning round, where each team is allowed 1.5 minutes to ask questions to opposition. (No cap on questions, follow up questions not allowed).
- The second speaker of the FOR team shall wrap up the argument in a 3 minute speech,
- Followed by a similar 3-minute speech by the second AGAINST speaker.
- 1 or 2 Elimination rounds in total, followed by a semi-final and a final in each category. All rounds will have the same format.

This will be followed by a Mega-Final (of the same format), where the winners and runner-ups of each category will face off.