



A Report on Four Days Design Engineering Workshop

46th FDP Design Engineering Basic level-1

16th January-2018 to 19 January-2018

*References: Guidelines for the Design Engineering Workshop
(Available at de.gtu.ac.in)*

Attended By:

Mr. Ronak Khurana (Assistant Professor, Civil Department)

Mr. Vishal Shah (Assistant Professor, Chemical Department)

Mr. Sandip Tandel (Assistant Professor, Computer Department)

Mr. Janak Patel (Assistant Professor, Electrical Department)

Mr. Zaid Shaikhji (Assistant Professor, Electronics & Comm. Department)

Mr. Rinkesh Patel (Assistant Professor, Mechanical Department)

Mr. Arun Prajapati (Assistant Professor, Civil Department)

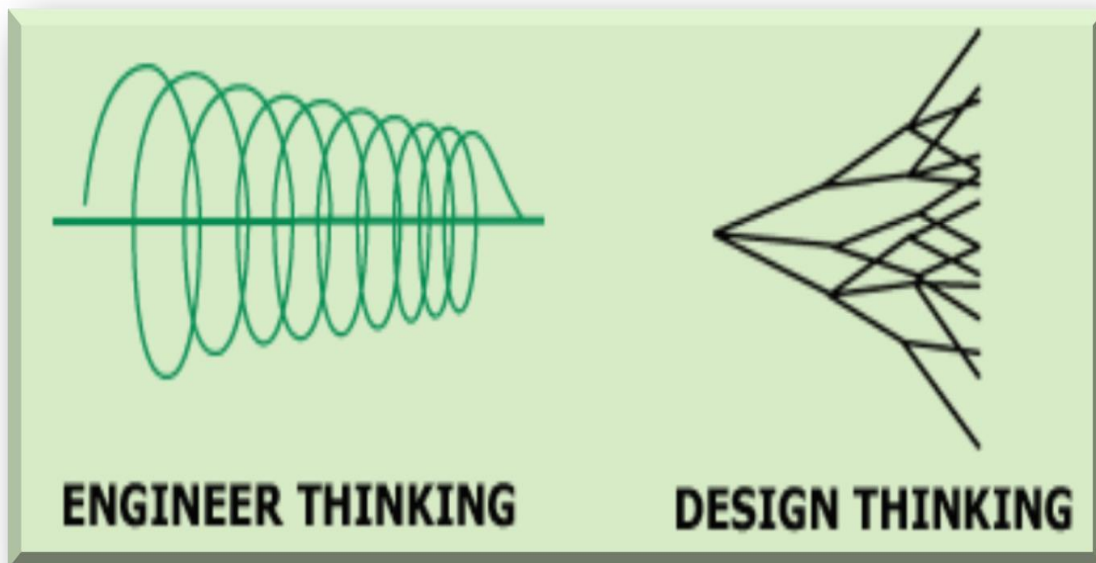
Schedule for Design Engineering Workshop

DAYS	ACTIVITIES
16 th January-2018	AEIOU FRAMEWORK & EXPERT LECTURE ON DESIGN THINKING
17 th January-2018	FIELD VISIT & DEVELOP CANVAS SHEET
18 th January-2018	PRODUCT DEVELOPMENT CANVAS
19 th January-2018	EXPERT LECTURE & PROTOTYPE MODEL

Day-1

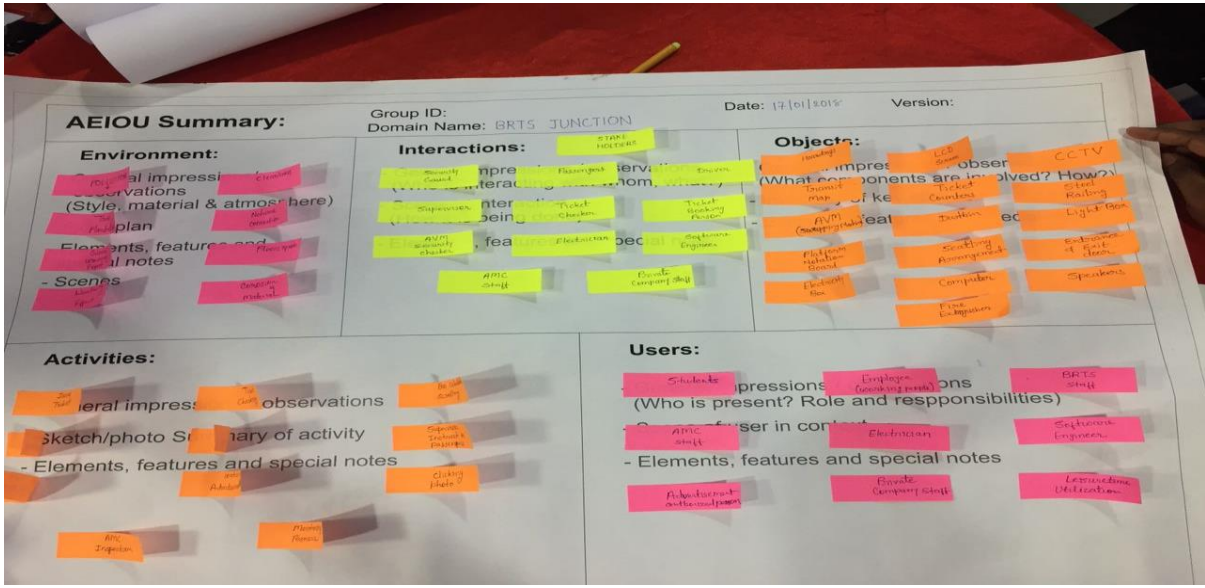
The workshop started with an inspiring speech by Prof Karmjitsinh Bihola, GTU for considering the subject as a chance to develop design thinking as an integral part of engineering studies.

Prof. Rohit Swarup started a first session on Design Thinking Methodology. He delivered the multimedia presentation emphasizing learning perspective of Design Thinking at initial stage of Design Engineering with GTU.



After this presentation the small exercise and group discussion session was conducted with the group of faculties.

In the post lunch sessions AEIOU Framework to make more insightful empathy by correlating AEIOU Observation sheets with Empathy mapping Canvas. Also he conveyed the importance of field survey for understanding the real problem and feeling of users.



AEIOU FRAMEWORK OF BRTS VISAT JUNCTION



Day-2

Day-2 started with an intriguing review session. All the mentors discussed the first day activities with their assigned group of Faculties and suggested the changes required with viability of the topic.

Next all the groups of Faculties went for the field survey in nearby region area looking at their title of the design they selected the user segment. While doing the survey they kept their AEIOU framework in mind and captured photos / videos / interaction clippings etc. in a very efficient and beautiful manner. Once the field survey was over they again started the next activity based on the survey i.e. canvases preparation.

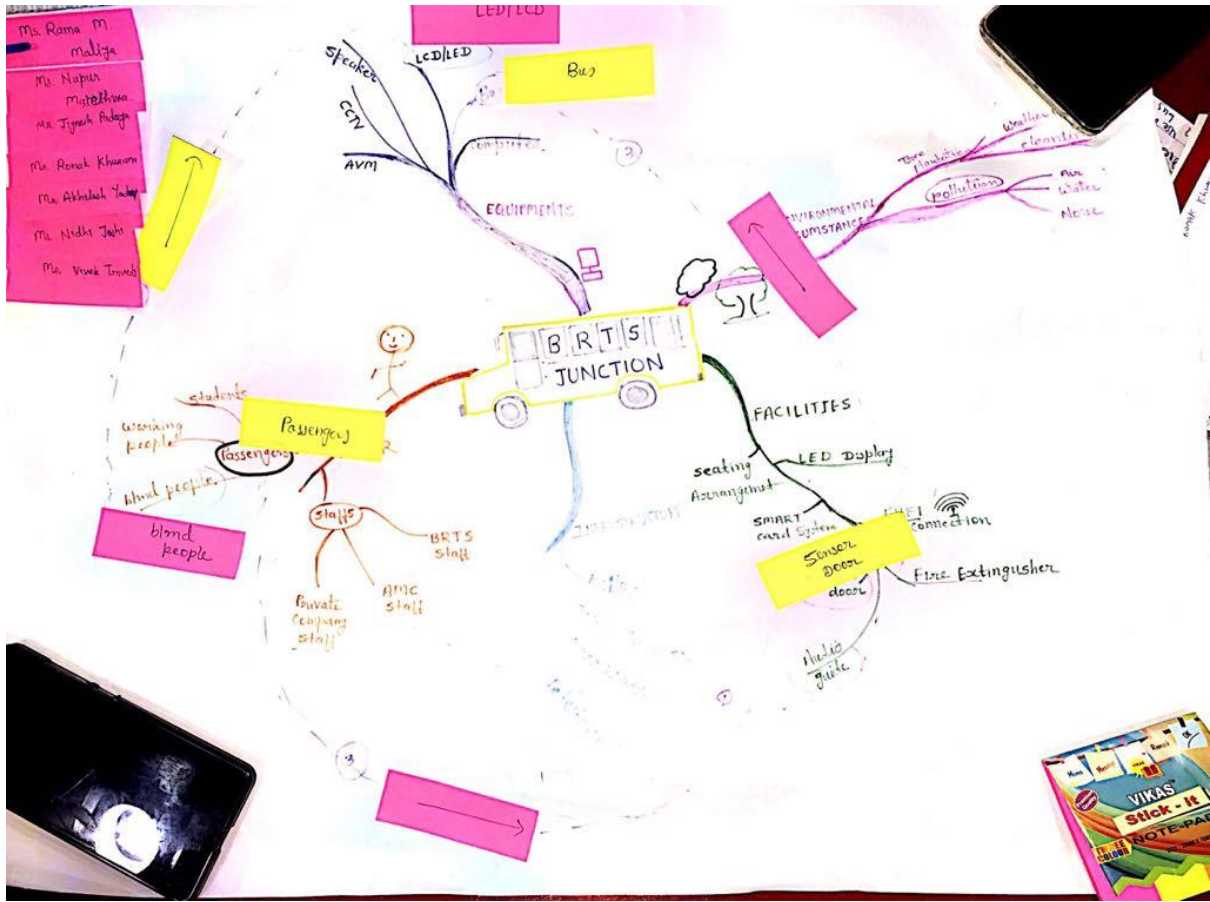
Post lunch, a very important session started and Faculties have explored lot many things which included Mind mapping, Empathy mapping & Ideation Canvas.

Last session of day was to define the learning needs and prioritizing them.

Date 17/01/2018 Version

USER Passenger Driver	STAKEHOLDERS ATMC staff Driver Supervisor
ACTIVITIES Automatic door opening Waiting Acknowledgment by bus Capturing photo Bus starts moving	
STORY BOARDING HAPPY Last month I want to go for interview in a multinational company by BRTS. But suddenly her ticket had been stolen by some strangers but due to positive efforts from BRTS staff they provide her new ticket from that she reach on time. HAPPY Day before yesterday, Jignesh went to Kalupur station by BRTS bus But suddenly after reaching station he saw any in his pocket that he forgot the mobile phone in that bus. but due to humanity nature from bus driver, he pickup that phone & give it back to him. SAD Few days ago, at shivaranjani BRTS stand due to not mending properly automatic door one child had fallen from that door, he got injured. SAD Few months ago, a collision was happened in between BRTS bus & auto rickshaw due to careless & hupazardly driving by BRTS bus driver.	

Empathy Canvas Development



Mind Mapping Canvas Development

Day-3

Day-3 started with review of Ideation canvas by Prof Karmjitsinh Bihola, GTU as well as development of Product Development sheets to know your complete idea for macro & micro observation.

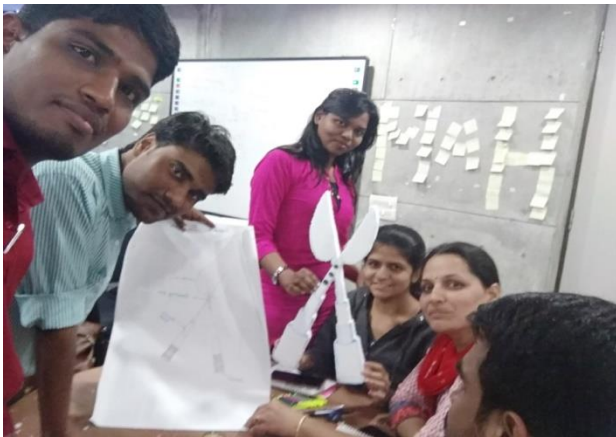
Product Development Canvas Team/Date/Version: / /

<p>Purpose</p> <p>What is the purpose of the concept you're developing? Does it solve a problem, or it enhances a certain experience? Is it helping a need or it is trying to create a new need or fill an unaddressed need?</p> <p><i>To design a responsive path between slides when it has</i></p>	<p>Product Experience</p> <p>Define what your customer will feel when using your product/service. Think emotions, feelings, etc. Think about the overall context or feeling of greater value/safety etc.</p> <p><i>Comfortable</i></p>	<p>Customer Revalidation</p> <p>Once you're finished with your feature set, test with the customer. Hear if the features/functions are useful. Listen to the customer.</p> <p><i>the concept is good and very useful</i></p>
<p>People</p> <p>Who is the key customer segment who will use this product/service or the end product of the concept you're pursuing? Write here about them, describe them a little.</p> <p><i>people</i></p>	<p>Product Functions</p> <p>Functions are a products answer to user problems/needs. They do something that user wants. They are often verbs in nature. Every function is powered by many features. Multifunctioning is when an element acts as a feature that covers the multifunctioning feature. A function can have one or more features powering it. Functions are very generic in nature. They are often more specific. Functions can be better to product experience. Safety/product function provides a feeling of safety.</p> <p><i>Easy to use</i></p>	<p>Reject, Redesign, Retain</p> <p>Post customer validation, reject those functions or features that the customers do not find useful. Redesign those that were safely useful, and retain those that did. Iterate with this until all functions/features are accepted.</p> <p><i>Reject</i> <i>Retain</i></p>
	<p>Product Features</p> <p>Product features are specific. One or more features will cover a function. Almost always, features are features that cover the safety function. (Batteries, RGB's, Home button to multi-task, etc.) Features covering the multifunctioning function (such as features) will have many corresponding sub-components covering it. Sometimes it may be a component (battery) a feature in itself. Like car door, is a major component and a feature at the same time covering the in-car entertainment function (passenger entertainment) in a product experience.</p> <p><i>Screen</i> <i>Automatic light</i> <i>Automatic power windows</i></p>	
	<p>Components</p> <p>Components build up the features. For a laptop it will comprise a list of components like track, mousing etc. that go into making it. For a battery-powered it will comprise of various chunks of code that will make the battery work. In cases where the feature is a major component, you need to have the sub-components that are required to make the major component work. You can end up new subcomponents and introducing you is planning new, all the components even.</p> <p><i>Screen</i> <i>Function</i> <i>Redesign</i></p> <p><i>Battery</i> <i>Transition</i> <i>Product maker</i></p>	

Product Development Canvas

Day-4

Day-4 started with Prof Karmjitsinh Bihola, delivered a brief talk covering the LNM theory and different ways to find out their learning needs in terms of theories, experiments, standards, components, hardware and software requirement of different tools and modules. After that the rough prototype design was carried out next. Faculties tried to convert their idea in the prototype with varieties of ways. Building the rough sketch/ model given them chance to work with team spirit and provided broad idea about how their design should look like.



Prototype Model

Workshop Conveners:

Mr. Karmjitsinh Bihola (Gujarat Technological University)

Mr. Rohit Swarup (Expert Guest)

