

## Design Driven Innovation Intervention for Final Year Projects

### *Sensitization and Framework Creations*

19<sup>th</sup> June 2013

#### **Background:**

Final Year projects are the capstone of engineering education. It is the learning from these projects that helps students connect their academic understanding with industry's requirements. The engineering fraternity is fast noticing a visible change in the needs and requirements of the industry.

#### **The need:**

In the past engineers were expected to possess strong technical understanding of concepts, and, an understanding of the applications of machines or processes to industry's requirements. Today young engineers are also required to develop new technologies and applications continuously.

This requires development of skill – thinking – attitude towards newer disciplines that may address this need for **engineers to be problem solvers, decision makers and original thinkers**.

Through extensive research, the top technology schools and industry have learnt that design temperament and innovation are two domains that will directly address these requirements.

#### **The workshop**

The 1<sup>st</sup> of its kind sensitization and framework-creation workshop on intervention of Design Driven Innovation for Engineering projects was conducted by International Innovation & Research Foundation (IIRF) for Gujarat Technological University (GTU) and was attended by more than 35 faculty members from various engineering colleges of Gujarat. The participants were those, who were given Pedagogical Awards on 14<sup>th</sup> February 2013.

The one- day “hands on”, “co creation” workshop focused upon sensitizing faculty members towards the why, what & how of design, design thinking and design driven innovation. The Workshop was to develop a framework for engineering projects based on design driven innovation.

The workshop was conducted in 3 stages,

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The first stage of the workshop focused upon introducing the faculty members to design temperament – design thinking, design skills, innovation processes, tools and techniques in a systematic and sequential manner - providing an insight into process, methods and tools & techniques that could be directly used in academic projects to produce innovation.

The second stage of the workshop provided exposure to faculty members to numerous best practices of the world, using examples of **Stanford's & IDEO's model**. Available innovation tools and techniques were analyzed and later applied. The goal was to be able to become continuously innovative and to empower others for maximum results by developing a culture for innovation.

The third stage of the workshop introduced the faculty members to IIRF's specially designed "Engineering Academic Project Framework" for GTU. A healthy discussion on various steps of the framework was conducted where faculty members participated by providing their practical inputs of the steps and how they would directly apply these to the academic environment in their respective colleges.

The first step of the academic projects i.e. Project Idea Scouting – Search for project ideas / problems / objectives was discussed in detail and the unique model of self – others – environment were proposed. The faculty members found this greatly useful and showed their enthusiasm towards using this to make each student project unique and original.

### Learning outcome

The concluding section of the workshop saw faculty members provide meaningful feedback about how they would use the knowledge of the day for their direct day to day application. This exercise was done in groups and resulted into some useful insights which were then incorporated in the Framework.

The success of the Workshop can be gauged by the fact that most of the faculties requested for the next in series workshop to be held for them immediately. Some of the faculty members felt that with this knowledge they would be able to overcome the problem of hypothetical, shelf projects and thus, will contribute in raising the number of innovations emerging from Gujarat.

The heartening fact was that all the faculty members understood the significance of various processes, techniques, methods and documentation that goes in the design driven innovation process. In fact minute details of how ideas have to be generated and problems identified and defined were gained through practical hands on exercises. Faculty members stated that they gained not just conceptual understanding of this new way but also how to apply it directly e.g. taking a human centric approach and linking industry problems to the projects. Thw Workshop provided to the participants a basic blue print for conducting innovation exercises with students in their respective colleges.

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Subsequent workshops shall sensitize faculty members to the other steps of the framework with the aim to develop faculty guidelines and students tool kit.

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Coordinated and executed by: Mr. Hiranmay Mahanta and Team GTU Innovation Council

Documentation support: Prakruti Bhatt , Krishna Joshi and whole team as mentioned below.

### Session outline:

1. Introduction: Design Driven Innovation
2. Various Models for Innovation using Design Thinking
3. Proposed Framework explanation and discussion
4. Exercise on Framework direct application (Stage I – Project Idea/problem/objective scouting)



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**Participants from various GTU Colleges**

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4. Gohel Kanu M
5. Patel Vipul J
6. Mr.Krushnakumar Solanki
7. Divyesh Mangroliya
8. Meghan Kemkar
9. Vishal Soni
10. Raval Tejas
11. Ronak Shah
12. Alpesh Parate
13. Saurabh Vashistha
14. Swati Gohel
15. Gunjan N Makwana
16. Prof. Ramesh N Barot
17. Urvi Upadhyay
18. Sagar Modi
19. Narendra Kumar Laur
20. Digbijoy Sarkar
21. Alpesh Parate

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25. Mitul Prajapati

26. Dr. Krishna Joshi

27. Rahul Patel

28. Hardik Patel

29. Sandip Patel

30. Harsora Bhavik

31. Akshay Prajapati

32. Ankur Rathawa

33. Dipesh Vaghela

34. Himanshu Patel

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