

## “Design Engineer – Skills for Success”

### Workshop Objective:

To make an Engineering Student to be able to

1. Communicate, negotiate and persuade
2. Work effectively in a team
3. Engage in self-evaluation and reflection
4. Utilize graphical and visual representations and thinking
5. Generate and evaluate alternative solutions
6. Appropriately model the physical world with mathematics
7. Identify critical technology and approaches, stay abreast of change in professional practice

### Course Content:

1. What is Design Engineering?
2. Skillsets for Design Engineers and Career Opportunities
3. GD&T - Fundamentals & its Importance
  - Why Use GD&T?
  - Rules and the Form Symbols
  - Bonus Tolerance
  - Datum's
  - Profile and Orientation
  - Position Tolerance I
  - Position Tolerance II
  - Symmetry and Coaxial Controls
  - Case Studies from Industry related Real time Examples showing effective utilization of GD&T
4. FMEA – Failure Mode Effect Analysis
  - Overview of FMEA
  - FMEA Procedures
  - FMEA Team
  - Types of FMEA

- Analysis of FMEA Results
- Case Studies from Industry related Real time Examples showing effective utilization of FMEA

#### 5. Root Cause Analysis Techniques

- Brainstorming
- The 5 whys
- Fishbone diagrams
- Case Studies from Industry related Real time Examples showing effective utilization of Root Cause Analysis

#### 6. Tolerance Stack Analysis – Fundamentals

- Introduction and review
- Stack fundamentals
- Factoring G D & T into a Stack
- Bonus and shift tolerance in a stack
- Case Studies from Industry related Real time Examples showing effective utilization of Tolerance Stack Analysis

In Addition there will be a Note lecture on Career and Entrepreneurship Opportunities in this field delivered by a Professional from a Top OEM.

#### **Practical & Demo Sessions:**

- Demonstration using GD&T Tools and Practice sessions on its effective Usage.
- Real Time Case Studies and Problem Statements from Industry and Participants will be finding Solutions supported by the Instructor.
- Understand Real Engineering Drawings used by Professional Design Engineers from Industry .

#### **Key Take Away:**

- ✓ Certificate of Proficiency after successful completion of the training.
- ✓ An exclusive Kit filled with E-Books and case studies Relevant to the field will be distributed to individual Participants.
- ✓ Lifetime Access to the Company's forum where students can reach for Technical and Career related enquiries.