MAHINDRA ÉCOLE CENTRALE

4-Year B. Tech. Degree Program

I Year I Sem

Course No: **ME 101**

Course Name: **Introduction to Design**

Credits: **3 (2-0-2)**

Course Position: **Semester 1**

Course Content:

Engineering graphics:

The principles of projections: projections of points, lines, and planes. Parallel and Oblique projections. Orthographic projections in the first and third angles. Isometric projections. Conversions between orthographic and isometric views. Sectional views in orthographic projection. Perspective views and the concept of the vanishing point. Use of computer graphics software to create 2-dimensional drawings. Exposure to a 3-dimensional solid modelling software is an option left to the instructor.

Introduction to Design:

Need recognition and the conception of an idea to meet this need. Problem definition, and a method of directed development leading to the construction and evaluation of a prototype. Steps will include feasibility study, preliminary design, detailed design, design evaluation and optimization, and physical realizability.

A project component of this course will require the student to design and build a prototype to address a stated need.

Text Book:

- Engineering Drawing by N. D. Bhatt, Charotar Publishing House Pvt. Ltd., Anand, 2012
- Engineering Design by G. E. Dieter and L. C. Schmidt, McGraw Hill 4th ed.

References:

- Introduction to Design by Morris Asimow, Prentice-Hall, Inc., Englewood Cliffs, NJ, 1962
- Jony Ive: The Genius Behind Apple's Greatest Products by Leander Kahney, Penguin UK, 2013
- Total Design by Stuart Pugh, Prentice Hall, 1990
- Effective Innovation: The Development of Winning Technologies by Don Clausing and Victor Fey, American Society of Mechanical Engineers, 2004