Course Title: Additive Manufacturing — Course Code: IR 103

Course Background / Summary:

This course will be helpful for design engineers, manufacturing engineers, product designers, research engineers, research scientists, managers, VPs of product development and manufacturing, and technology and innovation strategists from industries such as aerospace, automotive, medical devices, electronics, consumer products, energy, and robotics. The course material is accessible for those new to AM, yet highly comprehensive and valuable for those who already have significant experience with AM.

Course Objectives:

- Learn the fundamentals of additive manufacturing (AM) of polymers, metals, and ceramics, along with those for emerging materials (e.g., nanocomposites, biomaterials) and complex architectures.
- Understand state-of-the-art AM methods' operating principles, capabilities, and limitations, including laser melting, fused deposition modeling, stereolithography, and jetting.
- Familiarize with the complete workflow of AM, including computational design tools, file formats, toolpath generation, scanning, and microstructure characterization.

Target Audience:

- Engineers, Fresh Graduates, Graduating Students, Working Adults

Course Duration: 2 Days

IR 4.0 / ICT

Course Contents

1.0 Introduction to Additive Manufacturing

2.0 Emerging trends and business model

3.0 Hands-on lab

4.0 Design case study

5.0 AM parts to conventional processes