INSPECTION AND QUALITY CONTROL IN MANUFACTURING

MECHANICAL ENGINEERING

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TYPE OF COURSE : New | Elective | UG/PG
INTENDED AUDIENCE : B.E./M.E./M.Sc./Ph.D
COURSE DURATION : 4 weeks (25 Feb’19 - 22 Mar’19)
EXAM DATE : 27 April 2019

INDUSTRIES APPLICABLE TO : TATA Motors, ISRO, DRDO, Railways, BHEL, IOCL, Bharat Forge, Larsen and Toubro, Mahindra & Mahindra; etc.

COURSE OUTLINE :
In manufacturing, quality control is a process that ensures customers receive products free from defects and meet their requirements. Inspection and measurement is needed during production for quality control because of the inherent variability introduced by the machines, tools, raw materials, and human operators which causes variations in the different quality characteristics (length, diameter, thickness, tensile strength, surface finish etc.) of the product. Inspection and testing are very important in maintaining a certain quality level in the product during production.

ABOUT INSTRUCTOR :
Dr. Kaushik Pal is an Associate Professor in Department of Mechanical and Industrial Engineering, IIT Roorkee since 2012. He obtained his Ph.D Degree (2009) from IIT, Kharagpur and then joined Gyeongsang National University, South Korea for pursuing Post-Doc research. His fields of interests are surface modification of nano-materials and use of such materials in different electronic, mechanical and bio-medical applications.

COURSE PLAN :
Week 01 : Introduction, Fundamental Concept of Quality, Role of Inspection and Measurement for Quality Control in Manufacturing, Need of Inspection, Inspection types and Principles, Design for Inspection, Destructive Inspection, Testing of Composite Materials
Week 02 : Non-destructive Inspection-I: Visual Inspection, Dye Penetrant Inspection, Magnetic Particle Inspection, Eddy Current Inspection, Ultrasonic Testing