

Course: Theory of Production Processes

Course Code: noc18-me27

Session: 2017-18

Duration: 12 Weeks

Assessment procedures: Weekly Assignment (25%) + proctored certification Exam (75%)

Curriculum of the Course:

Week 1: Theory of casting and solidification, Fluidity of liquid metals

Week 2: Technology of patternmaking and mouldmaking, Pattern allowances, Testing of molding sand, cores

Week 3: Gating system design, Riser Design, different methods of calculating riser volume, Feeding distance calculations

Week 4: Theory of melting and production of ferrous and non-ferrous materials, Casting design, Casting defects

Week 5: Mechanical fundamentals of metalworking: Concept of stress and strain, stress and strain tensors, Hydrostatic and deviatoric stresses, Flow curve

Week 6: Yield criteria for ductile materials, plastic stress strain relationships, classification of metalworking, mechanics of metalworking

Week 7: Analysis and classification of rolling and forging processes, Force calculations in rolling and forging processes

Week 8: Analysis and classification of Extrusion process, Analysis of wire, rod and tube drawing processes, Forming defects

Week 9: Classification of welding processes, Thermal effects in welding, Basic metallurgy of fusion welds, Heat affected zone in welding

Week 10: Principles of welding processes: Arc welding, Gas metal arc welding, Solid state welding, Resistance welding, Soldering, Brazing and adhesive bonding

Week 11: Residual stresses in welding, Methods of measurement of residual stresses in welding, Welding distortion and its types, Methods of reducing residual stresses and distortion in welding

Week 12: Weldability of materials: Introduction and assessment of weldability, Test for weldability, Weldability of ferrous and non-ferrous materials

List of students enrolled

S. No.	Name
1	Mohammad jawed iqbal