10 ME 42E WELDING TECHNOLOGY
IV B.Tech II Semester
(with effect from the academic year 2013-2014)

Credits: 4

Lectures/week: 4 Hrs. *Sessional Marks: 40*
University Exam:3 Hrs *End Examination Marks: 60*

UNIT –I

Gas Welding : Introduction – Gases – Production of Oxygen and Acetylene – Setup and Equipment – Cylinder valves – Pressure regulators- Welding torches – Types of flames – Gas Welding techniques, GTAW, GMAW,SAW, Filler rods – Fluxes rods – Fluxes – Oxy hydrogen welding.

UNIT-II

Arc Welding : Carbon Arc Welding – Metal arc Welding – TIG welding – MIG welding – Submerged arc welding.
Equipments and Electrodes for arc welding : DC generators – AC Transformers – Rectifiers, Machine characteristics, Applications. B.I.S. Classifications of Electrodes for Arc welding – Coating of electrodes.

UNIT-III

Special Welding Process: Electron beam Welding – Laser welding – Thermit welding – atomic Hydrogen welding – soldering – Brazing –Adhesive bonding – metal spraying.
Thermal Cutting Process : Gas Cutting – Arc cutting – Plasma Arc Cutting – Oxygen lance cutting.

UNIT-IV

Pressure Welding Process: Forge welding – friction welding – Explosive welding – Ultrasonic welding – Diffusion bonding.
Resistance welding : Spot & Seam Projection welding – Flash welding – Upset welding – Heat balance in Resistance welding.

UNIT-V

Defects in welding – Destructive and Non- destructive testing (NDT) – X-ray and Gamma ray testing – testing of pope, plate, boiler, drum etc., Magnetic particle testing – Liquid penetrant testing – Ultrasonic testing.
Welding symbols: Need – Representing the welds – Location of weld – supplementary symbols Dimensions of welds.

TEXT BOOKS:

1. Welding and Welding Technology : Little, Richard L
2. Welding process and Technology : R.S. Parmer

REFERENCES :

1. Welding Technology : Konigsberger F
2. Welding Technology : O.P.Khanna
3. Welding Engineering &Technology : Parmar R.S