

POSMAT I Programa de Pós-graduação em Engenharia de Materiais



Course: Welding Technology

Code: MEM.029

Credits: 03

Module: Specific formation

Research area: Selection, processing e characterization

Contents:

Joining, cutting and allied process. Physics of welding and cutting (energy sources, electric arc, metallic transfer and melting rate). Heat flow in welding (heat flow and the results). Metallurgical phenomena involved in fusion and solid-state welding. Mechanical and non destructive evaluation of welded joints. Residual stress and distortions in welding (variables, prevention and control)

References:

1. AMERICAN WELDING SOCIETY. **Welding Handbook**, Volume I: Welding Science and Technology Ed. American Welding Society, 9th Edition, 2001.
2. LANCASTER, J.F. **The Physics of Welding**, IIW, Pergamon Press, 1986.
3. LANCASTER, J.F. **Metallurgy of Welding**. 6th Edition, Woodhead Publising Limited, 1999.
4. KOU, S. **Welding Metallurgy**. 3th edition. John Wiley and Sons, 2002.