

_____SOUTH SEATTLE COMMUNITY COLLEGE_____

Technical Education Division

COURSE OUTLINE
Revision: D. Weber, August, 2011

DEPARTMENT: Manufacturing Technology

CURRICULUM: Welding Fabrication Technology

COURSE TITLE: Materials & Testing

COURSE NUMBER: WFT 111

TYPE OF COURSE: Vocational Preparatory

COURSE LENGTH: 1 Quarter

CREDIT HOURS: 5

LECTURE HOURS: 55

LAB HOURS: (lecture/lab)

CLASS SIZE: 25

PREREQUISITES: WFT: 100,

COURSE DESCRIPTION:

Lecture examines theory and application of metallurgical principles as they are applied to weld design and heat affected zone (HAZ), heat treating and distortion (pre-post), and heat effects on crystalline structure of Ferrous and non-ferrous metals. Also, studies will include methods of destructive and nondestructive testing.

WFT 111 Materials & Testing
August, 2011

STUDENT LEARNING OUTCOMES ADDRESSED:

1. Human Relations - Use social interactive skills to work in groups, as assigned, to complete minimum skill requirements
2. Personal Responsibility - Take responsibility for meeting deadlines as assigned. Demonstrate safe shop practices. Take pride in one's own workmanship per industry standards, courtesy and production level
3. Communication - Speak and write effectively to communicate formulated action plans for activities and projects

GENERAL COURSE OBJECTIVES:

At the end of the course the student will be able to:

1. Identify the major types of heat treating operations and explain their uses
2. Experiment with preheat, interpass temperature changes, post heat, annealing, hardening, and drawing (tempering)
3. Describe basic processes and necessities of destructive and nondestructive testing use in the current industry.
4. Make a general report on the heat-treat industry

TOPICAL OUTLINE	APPROX. HOURS
I. Heat and basic metallurgical considerations	20
II. Heat treat operations	10
III. Control of heat input and cooling rates	10
IV. Destructive and non-destructive testing	<u>15</u>
	Total 55

Detailed Topical Outline is available separately

REVISED BY: D. Weber
DATE August, 2011