

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: ETI 2423

COURSE TITLE: Melting

PREREQUISITE(S): None

COREQUISITE(S): None

CREDIT HOURS: 3

CONTACT HOURS/WEEK: 3

CONTACT HOUR BREAKDOWN:

Lecture/Discussion: 3

Laboratory:

Other:

FACULTY WORKLOAD POINTS: 3

STANDARDIZED CLASS SIZE 30

ALKLOCATION:

CATALOG COURSE DESCRIPTION:

This course focuses on the current state-of-the-art Electric Arc Furnace (EAF) steelmaking process. Students in this course will develop an in-depth understanding of the chemistry, raw materials, melting, oxidation refining, slagmaking and foaming, and deoxidization associated with the modern EAF process. Prior to completing this course each student will actively participate in the production of a heat of steel. Enrollment in this course is restricted to AmeriSteel Corporation employees only.

SUGGESTED TEXT(S): The Making Shaping and Treating of Steel, 10th Edition,
Published by AISE

IMPLEMENTATION DATE: Fall Term, 2000

REVIEW OR MODIFICATION DATE: Fall Term, 2002 (20031)
Fall Term, 2006 (20071) (was ETI 2156)

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
I. Introduction	1
A. History	
B. Course Outline	
II. Electric Arc Furnace (EAF) Steelmaking	11
A. Mechanical Features	(3)
B. Electrical System and Equipment	(4)
C. Metallurgical Process	(4)
III. Raw Materials	6
A. Scrap	(2)
B. Addition Agents	(2)
C. Fluxes	(2)
IV. Steelmaking Process	23
A. Melting	(6)
B. Oxidation Refining	(6)
C. Slag Making	(6)
D. Deoxidation	(5)
V. Electric Arc Furnace (EAF) Lab	4

PROGRAM TITLE: Industrial Management Technology (Steel Mill)

COURSE TITLE: Melting

CIP NUMBER: 1606200101

LIST PERFORMANCE STANDARD ADDRESSED:

NUMBER(S): TITLE(S):

11.0 DEMONSTRATE APPROPRIATE UNDERSTANDING OF BASIC SCIENCE - -The student will be able to:

11.01 Understand molecular action as a result of temperature extremes, chemical reaction, and moisture content.

11.02 Draw conclusions or make inferences from data.

18.0 DEMONSTRATE AN UNDERSTANDING OF TECHNICAL OR INDUSTRIAL COMPETENCIES - - The student will be able to:

18.01 Demonstrate an understanding of technical or industrial competencies as specified in the curriculum frameworks of any post-secondary adult or post-secondary vocational program.