COURSE OUTLINE : WELD 125
D Credit – Degree Applicable
COURSE ID 001551
Cyclical Review: September 2020

COURSE DISCIPLINE : WELD

COURSE NUMBER : 125

COURSE TITLE (FULL) : Advanced Welding Procedures

COURSE TITLE (SHORT) : Adv Welding Procdrs

ACADEMIC SENATE DISCIPLINE: Welding

CATALOG DESCRIPTION

WELD 125 is advanced welding procedures and practices for experienced students or industrial workers who wish to improve and update their manipulative skills or prepare for a specific certification in shielded metal arc welding (SMAW), tungsten inert gas, or metal inert gas welding.

Total Lecture Units: 0.00

Total Laboratory Units: 1.00

Total Course Units: 1.00

Total Lecture Hours: 0.00

Total Laboratory Hours: 54.00

Total Laboratory Hours To Be Arranged: 0.00

Total Contact Hours: 54.00

Total Out-of-Class Hours: 0.00

Prerequisite: WELD 117 or WELD 121, or equivalent.

ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1	WELD	117	Introduction To Welding	Perform oxy-fuel welding in all positions and oxy-fuel cutting and brazing, plasma arc cutting;	Yes
2	WELD	117	Introduction To Welding	perform destructive and non-destructive testing on specific weld joints done in all positions;	Yes
3	WELD	121	General Welding	perform manipulative skills in oxy-fuel welding, cutting, brazing, and shielded metal arc welding, and plasma arc cutting;	Yes
4	WELD	121	General Welding	demonstrate a working knowledge of oxy-fuel, welding and cutting equipment, shielded metal arc welding equipment, plasma arc cutting equipment and their theories;	Yes
5	WELD	121	General Welding	critique and evaluate weldments after properly performing a series of destructive tests on the samples;	Yes
6	WELD	121	General Welding	demonstrate proper safety precautions in the use of oil oxy-fuel and shielded metal arc welding equipment;	Yes
7	WELD	121	General Welding	write and compile a general welding notebook to be used as a reference guide for related classes;	Yes
8	WELD	121	General Welding	show a general knowledge of basic metallurgy, welding terms and metal identification.	Yes

EXIT STANDARDS

1 perform manipulative welding exercises necessary to update skills in that area of concentration, welding process;
2 simulate a certification test in the specific welding process, start to finish testing procedures;
3 evaluate the performance test through testing and weld analysis;
4 explain and employ safety equipment and protocols for welders.

STUDENT LEARNING OUTCOMES

1 examine and perform safely while evaluating personal performance in testing and weld analysis;
2 choose appropriate techniques or processes necessary to update welding skills;
3 evaluate personal performance in weld testing and weld analysis.

COURSE CONTENT WITH INSTRUCTIONAL HOURS

	Description	Lecture	Lab	Total Hours
1	Oxyacetylene Welding Processes • Flame cutting • Brazing • Welding procedures	0	10	10
2	Metallic Arc Welding Processes • Machine and accessories • Electrodes • Electrode manipulation	0	13	13
3	Tungsten Inert Gas Welding Processes • Machine and Accessories • Tungsten electrodes • Inert gases (Shielding gases)	0	13	13
4	Metal Inert Gas Welding Procedures • Machine and accessories • Electrode wires • Electrode manipulation and procedures	0	10	10
5	Certification Procedures for Structural Steel • Written examinations • Practical welding examination information and practice	0	8	8
				54

OUT OF CLASS ASSIGNMENTS

1 write an essay describing the process used to complete final project;
2 final project (e.g. 3/8" vee-groove in the flat position);
3 peer analyze welding assignments.

METHODS OF EVALUATION

1 ongoing weld specimen testing procedure designed to produce quality weldments of certification status.
2 tensile testing, guided bend testing, and visual examination by the instructor.
3 written final examination;
4 final project (e.g. 3/8" vee-groove in the vertical position).

METHODS OF INSTRUCTION

- [x] Lecture
- [x] Laboratory
- [ ] Studio
- [ ] Discussion
- [x] Multimedia
- [ ] Tutorial
- [ ] Independent Study
- [ ] Collaboratory Learning
- [x] Demonstration
- [ ] Field Activities (Trips)
- [x] Guest Speakers
- [ ] Presentations

TEXTBOOKS

Title	Type	Publisher	Edition	Medium	Author	IBSN	Date
None							