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## SECTION HEADING

### WELD 1260: Metallurgy and Materials

#### Description

Metallurgy and Materials evaluates the basic elements of metallurgy and weld-ability as it pertains to commonly welded materials. Instruction will be provided on the weld ability of metals, the effects of welding on metals, mechanical properties of metals, alloys and their properties, applications of various types of metals, metal classification systems, and procedures for welding hard-to-weld metals.

#### Credits

2

#### Prerequisite

None

#### Corequisite

None

#### Topics to be Covered

1. Overview of the joining process
2. Overview of the welding process
3. Metals as materials
4. Solidification of metals and alloys
5. Solidification of welds
6. Welding of aluminum and stainless steel
7. Effects of heat on metals

#### Learning Outcomes

1. Describe the basic metallurgy of the melted metal or alloy.
2. Identify the cause and avoid weld defects.
3. Demonstrate ability to choose and adjust the welding parameters and techniques to optimize the welding process.
4. Demonstrate ability to select the appropriate welding process for a particular application.
5. Recognize and demonstrate safe and proper use of materials.
6. Demonstrate the technical understanding of metallurgy and materials.

#### Credit Details

Lecture: 2

Lab: 0

OJT: 0

MnTC Goal Area(s): None