Print Date: 3/19/18

**Course Objectives/Course Outline**
**Spokane Community College**

**Course Title:** **Lifting and Rigging**
**Prefix and Course Number:** **IMMA 102**

**Course Learning Outcomes:**
**By the end of this course, a student should**:

- Describe various types of lifting equipment, fixed and mobile
- Explain the role of lifting equipment in industrial maintenance
- Demonstrate the use of ANSI hand signaling in industrial maintenance scenarios
- Describe the process of rigging
- Describe rigging hardware, ropes/chains, and hitch configurations
- Apply formulae to calculate lift points for rigging
- Apply preoperational inspection techniques to lifting equipment
- Demonstrate the correct operation of mobile and fixed lifting equipment
- Evaluate lifting and industrial maintenance scenarios for safety and proper technique
- Demonstrate proper safety techniques when handling shop materials and operating equipment
- Demonstrate professionalism, critical thinking, and teamwork during in-class discussions, presentations, and hands-on activities

**Course Outline:**

A. *NOTE:* This course schedule is subject to change at the discretion of the instructor.

**I. Week One**
A. Introduction and Overview
B. Safety Topics Overview
C. General Safety Tour

**II. Week Two**
A. Introduction to Hand Signaling
B. Radio Communication
C. Moving machinery: cranes, pipe, glides, air slides lab: practice hand signaling scenarios
D. Lab: Practice hand signaling scenarios

**III. Week Three**
A. Forklift, jib hoist, pallet jack, bridge cranes, monorail cranes, RT cranes, lift tables, cherry picker, come-alongs, chain falls
B. Lab: calculations for lifting
C. Lab: (depending on availability of equipment) demonstration and practice with lifting equipment

**IV. Week Four**
A. Lifting Equipment Types (man lifts, scissor lift, bucket truck)
B. Fall Protection, harnesses and lanyards
C. Lab: fall protection – practice putting on equipment and inspecting the gear, checking documentation

V. **Week Five**
A. Stickers
B. Forklift Training and Safety
C. Lab: Forklift Rodeo (cement blocks, stacks of pallets, cones, objects around the shop)

**VI. Week Six**
A. Midterm Exam covers skills learned in Weeks 1 - 5

**VII. Week Seven**

A. Rigging Equipment and Safety
B. Lift Points and Calculations
C. Lab: Hook up rigging

**VIII. Week Eight**

A. Lab: inspect broken and failed readings
B. Lab: math/rigging calculations

**IX. Week Nine**

A. Cranes- fixed and mobile
B. Crane safety
C. Swing path, warnings, work environment (inside, outside)
D. Lab: Crane Operation Activity

**X. Week Ten**

A. Field trip possibilities: Alcoa, Mason Crane, Genie, Nucor
B. Options: Field Trip- lifting equipment in action
C. OR- Rigging/Crane operation project- unpack and inspect parts, lift/hoist parts, install and align parts at destination; or repeat forklift rodeo

**XI. Week Eleven**

A. Field Trip

**XII. Week Twelve**

A. Final Exam covers skills learned in Weeks: 1 - 11