

Course Objectives/Course Outline
Spokane Community College

Course Title: RACEWAYS

Prefix and Course Number: ELMT 262

Course Learning Outcomes:

By the end of this course, a student should be able to:

- apply trigonometry to conduit bending
- bend conduit to measurement and level standards
- demonstrate basic bending techniques with hand, mechanical, and hydraulic benders
- install PVC conduit

Major Topics to Be Presented

Applied Trigonometry
Types of Raceways
Types of Benders
Bending Techniques

Course Outline:

I. Triangle Trigonometry

A. Angles and Triangles

1. Angle measurement
2. Right Triangles
3. Pythagorean Theorem
4. Special Right Triangles

B. Trigonometric Ratios

1. Sine Ratio
2. Cosine Ratio
3. Tangent Ratio
4. Finding Values of Trigonometric Functions
5. Finding the Angle

C. Solving Right Triangles

II. Benders

A. Types

1. EMT
2. hickey
3. hydraulic
4. chicago
5. PVC hot box

B. Applications

III. Bends

A. Types

1. box offsets
2. stubs

3. offsets
4. saddles
5. kicks
6. multiple bends

IV. Conduit

- A. Types
- B. Cutting
- C. Characteristics

V. Conduit Labs

- A. Determine gain & take-up
- B. 90 degree bends
- C. Back to back bends
- D. Kick
- E. Box offsets
- F. Offsets using methods 1 & 2
- G. 3 Bend Saddles using methods 1 & 2
- H. 4 Bend Saddles using methods 1 & 2
- I. Combination bends
- J. Single & multiple bends using a mechanical bender
- K. Single bends using a hydraulic bender