

## Basic Construction Math Syllabus

**Time:** 8 hours

**Maximum Class Size:** 10

**Prerequisites:** None

### Course Description:

This 8-hour LIUNA Training and Education course covers basic math operations and applies them to problems in the construction industry. Topics include fractions and decimals, area and volume, converting between measurement systems, squaring principles and basic survey procedures. Students practice taking measurements, using the concepts for measuring pipe, placing concrete and setting grade stakes.

### Goals/Objectives/Student Learning Outcomes:

- Use basic math processes to solve problems involving fractions and decimals (80% correct)
- Use standard math formulas to solve problems involving area and volume and common construction materials (80% correct)
- Use common construction measuring equipment to identify units of measure in the US Standard system, the metric system and the decimal system.
- Measure a variety of objects to within  $\pm 1/8"$  or 3mm using common construction measuring equipment
- Convert measurements between the US Standard system and the decimal system
- Convert the metric measurements to the US Standard system measurements using multipliers
- Identify, set-up and use horizontal and vertical measuring equipment to perform basic layout, squaring and grade measurements.

### Standards Addressed

- OSHA 29 CFR 1926-Subpart E: Personal Protective Equipment

### Classroom Rules and Procedures

- All classes begin at 6:30 am and end at 3:00 pm
- Upon entering classroom, all participants must sign in and be seated by 6:30 am

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- Class will consist of a combination of lecture, video, demonstration, coached group exercises, individual exercises and assessment.
- Students are required to report to class ready to work and maintain the provided PPE

### Textbooks/Readings/Materials

- *Basic Construction Math IG/PG- LIUNA Training*
- *Basic Construction Math Power Point*
- *Basic Survey Procedures Power Point*
- *Basic Construction Math Exit Exam A & B*

### Tools/Equipment/Other Materials

- 10 US Standard, metric and decimal steel measuring tapes
- 10 calculators
- Conversion Table
- Stakes

### Personal Protective Equipment

- None required

### Course Requirements

To receive credit for the course, participants must:

- Be present for full eight hours
- Participate in all classroom exercises
- Pass a written exam
- Pass a hands-on exam

### Course Policies

- Participants must be on-time and ready to work.
- Participants must return from breaks on-time.
- Participants must participate in each exercise and assignment
- Participants who are on "light duty" are not allowed to take this course due to the physically demanding requirements.

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### **Assessment and Grading**

Participants will be assessed on the following:

- All written exams must be passed with a score of 80% or above.
- All hands-on exercises are graded on performance and participation. They are pass/fail and must be passed with a score of 80% or above.