

**EMRTC Advanced Ballistics Shooting Course**  
**Available to Law Enforcement and Military**  
**(Maximum 10 students per class)**

**Day 1**

**Classroom**

Atmospheric effects (Density, altitude effects, humidity, head wind, tail wind, etc.)

Ammunition Effects (Temp performance, MV uniformity)

Projectile effects (Drag uniformity, drag performance, accuracy)

Variables contribution to accuracy calculator

Drag Coefficient versus BC

Muzzle jump

Spin drift

Curved earth effects and Coriolis effects

High angle fire

4DOF drag based solver vs BC based solvers. (How it works and using it, Drag form factor, scope angle)

How to setup scope and zeroing rifle (Leveling, measure POI, cross wind and muzzle jump)

Setup each student on 4 DOF if desired

Zeroing, check of scope leveling and click values at 100 yard range. Determination of scope zero angle for 4DOF.

**100 m SAR Range**

Rifle zeroing and determination of scope angle for 4DOF ballistic solver

**Day 2**

**Range: 3 km flat fire range, steel target ranges based on caliber, up to 9 steel targets, 6' X 6' target for long range accuracy, remote cameras for long ranges, Radar, targets to 2,000 meters**

Shooting with each student on radar at 3 Km range (determine 4 DOF Form Factor or Truing)

Group wind reading exercise

Shoot remainder of day as shooter/spotter pair at distance practice with 4 DOF solver (Lunch on site)

**Day 3**

**Range: 1.4 km high angle of fire range (up to -20 deg), target ranges based on caliber, 6 targets**

High angle of fire range and using 4 DOF at ranges from 450 to 1,550 yards (lunch on site)

Wind reading in mountainous terrain

Additional shooting time on 3 Km range if desired.

Review, questions and observations

## Extra Course Options

### **(Option 1) Day 4: High altitude, MRO shooting**

Travel to MRO range @ 10,000 ft

Validate zero

Shoot flat fire to 2,000 yards and high angle of fire to 800 yards.

Validate trajectory solver

### **(Option 2) Day 4: Terminal performance demonstration, barrier testing**

#### **Classroom**

Principles and physics of terminal performance, expanding and non-expanding projectiles

#### **Indoor Ballistics Lab**

Testing of student projectiles with ordnance gelatin at different simulated ranges for terminal effects

Firing through barriers into gelatin to explore effects on projectile terminal performance (glass and Steel)

### **(Option 3) Night firing on 3 Km or High angle range**

Best time for training would be at the end of the last day.

Range time would depend on student desires and time of year

Summer full dark approx. 2130 hrs; winter full dark approx.. 1730 hrs

**Equipment required by students:**

Notebook

Logbook

Safety glasses

Hearing protection

Rifle with precision adjustable scope with a minimum of 70 moa or 20 mils elevation adjustment. (Rifle and scope should be checked for true leveling of scope relative to rifle, scope tracking and true adjustment values)

Ammunition (200 rounds minimum)

Shooting mat

Spotting scope

Laser range finder

Inclinometer or cell phone with inclinometer

Protection from high altitude sun

Compass, GPS, or cell phone compass

Several hundred yards of climbing over steep rocky terrain will be required, bring appropriated footwear.

**CLASSES ON OTHER TOPICS AND DISCIPLINES AVAILABLE ON REQUEST.**