

ES302 Introduction to the Triangulation Method

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Name _____

Triangulation is the process of locating an unknown position by reference to three known points. This simple technique forms the basis of satellite-based Global Positioning System (GPS) technology.

Task 1: take the attached map, brunton compass, and protractor to the middle of the WOU parking lot, immediately northwest of the “DeVolder” building.

Task 2: Check your compass to make sure the magnetic declination is properly set. Examine the base map and orient yourself. Visually find the water tower on Cupid’s Knoll, the northeast corner of the stadium grand stand, and the northwest corner of the “Cottage” building. Locate these positions on your base map.

Task 3: From your unknown position, determine azimuth bearings to and from each of the three known points, record your data below:

Known Location	Azimuth From Unknown Position	Reverse Azimuth From Known Points
Water Tower/Cupid’s Knoll	_____	_____
NW Corner Stadium Grand Stand	_____	_____
NW Corner Cottage	_____	_____

Task 4: Using the protractor and base map, draw the three “reverse azimuth” lines from the known points. Plot your unknown position with a point where the three lines intersect.

Task 5: Using the 1:24,000 scale Monmouth 7.5-minute Topographic map in the lab, determine the fractional scale of your attached base map. Show all of your math work.

Task 6: Using your GPS device, locate your present position in both Longitude-Latitude (decimal degrees) and UTM Zone 10 N meters (Datum NAD1927 Conus)

Longitude _____

Latitude _____

UTM Easting _____

UTM Northing _____

