EO C390.05 – CALCULATE MAGNETIC DECLINATION

1. **Performance.** Calculate Magnetic Declination.

2. **Conditions**

   a. Given:

      (1) Magnetic declination worksheet,

      (2) Pen/pencil,

      (3) Supervision, and

      (4) Assistance as required.

   b. Denied: N/A.

   c. Environmental: Classroom or training area large enough to accommodate the entire group.

3. **Standard.** The cadet shall calculate magnetic declination.

4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Discuss the three norths and magnetic declination, to include: a. true north, b. grid north, c. magnetic north.	Interactive Lecture	5 min	A2-041 (pp. 50–54)
TP2	Explain, demonstrate and have cadets calculate magnetic declination, to include: a. locating declination diagram; b. identifying the formula used to calculate magnetic declination; c. calculating magnetic declination by: 1. identifying grid magnetic angle; 2. identifying current year; 3. identifying year of declination information; 4. identifying annual change; 5. determining whether the annual change is positive or negative; 6. inputting the information into the formula; 7. solving for current declination; and 8. determining whether the magnetic declination is east or west.	Demonstration and Performance	15 min	A2-041 (pp. 53–58)
TP3	Have cadets calculate magnetic declination.	In-Class Activity	30 min	

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5. **Time**

a.	Introduction/Conclusion:	10 min
b.	Interactive Lecture:	5 min
c.	Demonstration and Performance:	15 min
d.	In-Class Activity:	30 min
e.	Total:	60 min

6. **Substantiation**

   a. An interactive lecture was chosen for TP 1 to orient the cadet to calculating magnetic declination and present basic material.

   b. Demonstration and performance was chosen for TP 2 as it allows the instructor to explain and demonstrate calculating magnetic declination while providing an opportunity for the cadets to practice calculating magnetic declination under supervision.

   c. An in-class activity was chosen for TP 3 as it is an interactive way to reinforce calculating magnetic declination.

7. **References.** A2-041 B-GL-382-005-PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

8. **Training Aids**

   a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,

   b. Magnetic declination worksheet,

   c. Pen/pencil, and

   d. Magnetic declination worksheet answer key.

9. **Learning Aids**

   a. Magnetic declination worksheet, and

   b. Pen/pencil.

10. **Test Details.** N/A.

11. **Remarks.** Cadets may use a calculator if they wish.

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