

# Topography

1. **Course number and name:** 020TOGCI4 Topography
2. **Credits and contact hours:** 2 ECTS credits, 1x1:15 contact hours
3. **Name(s) of instructor(s) or course coordinator(s):** Saad Sfeir
4. **Instructional materials:** PowerPoint slides

5. **Specific course information**

a. **Catalog description:**

The goal of this course is to provide an introduction to surveying, covering topics such as geodesy and cartography, levelling, the use of measuring instruments, creation of topographic plans, profiles, and volume calculations, setting out techniques, and preparation of surveying base plans and official document folders.

b. **Prerequisites:** None

c. **Required/Selected Elective/Open Elective:** Required

6. **Educational objectives for the course**

a. **Specific outcomes of instruction:**

- Understand the necessity of having a detailed land survey base plan prior to any construction design work.
- Analyze and compute any required data on the construction site.
- Conduct on-site building stakeout.
- Perform cut and fill volume calculations.

b. **PI addressed by the course:**

|                 |     |
|-----------------|-----|
| <b>PI</b>       | 7.1 |
| <b>Covered</b>  | x   |
| <b>Assessed</b> |     |

7. **Brief list of topics to be covered**

- Introduction to surveying, plan coordinates, bearings, vertical and horizontal angles (2 lecture)
- Introduction to geodesy and cartography, ellipsoid, geoid, geographic coordinates, projections. (2 lecture)
- Introduction to the Lebanese cadastre (1 lecture)
- Introduction to surveying equipment (1 lecture)
- Angle measurements using the theodolite instrument (1 lecture)
- Electronic distance measurement (EDM) (1 lecture)
- Traversing using a total station (1 lecture)

- Building and boundary stakeout (1 lecture)
- As-built surveys (1 lecture)
- Introduction to terrain modeling and volume calculation (1 lecture)
- Leveling and leveling calculations (1 lecture)