

TECHNICAL CURRICULUM · SURVEYING, GEODESY & GEOMATICS · FULL-TIME

SURVEYING & GEOMATICS

A complete, practice-based training programme from the field through least-squares adjustment to the finished map.

Precisely measured, reliably computed, cleanly mapped.

THE PROGRAMME

Precision is no accident. This programme builds the skill for it, from the control point to the finished map.



29

TECHNICAL MODULES · 6 PHASES

1.350_h

PRACTICAL LEARNING

180₊

PRACTICAL EXERCISES

UAV

DRONE INCLUDED

2_{years}

FULL-TIME

Surveying & Geomatics is a practice-based full-time programme that combines fieldwork with the computational depth of geodesy.

Across twenty-nine technical modules in six phases, trainees progress from the fundamentals and surveying mathematics through horizontal and vertical measurement, adjustment computation and geodata to construction, cadastral and special surveying.

The focus is on practice throughout. Measurements are taken on real instruments and in real terrain, with around 1.500 hours of practical learning and more than 110 assessed exercises.

A dedicated phase concentrates the mathematical depth: error theory, error propagation, the method of least squares and map projections run as a common thread through the entire programme.

Each module concludes with an assessed practical piece. The programme is offered as a curriculum, as an equipment specification or as a turnkey package for the location.

PRACTICAL CURRICULUM

29 modules in six phases.

From fundamentals and surveying mathematics through horizontal and vertical measurement, adjustment computation and geodata to construction, cadastral and special surveying, concluding with the capstone project.

MODULE

01 – 29 · SIX PHASES

01 Introduction & safety culture
FUNDAMENTALS & MATHEMATICS

02 Surveying mathematics I
FUNDAMENTALS & MATHEMATICS

03 Coordinate geometry (COGO)
FUNDAMENTALS & MATHEMATICS

04 Distance measurement & reductions
FUNDAMENTALS & MATHEMATICS

05 Maps, plans & scale
FUNDAMENTALS & MATHEMATICS

06 Field book & technical communication
FUNDAMENTALS & MATHEMATICS

07 Levelling & height networks
POSITION & ELEVATION

08 Angle measurement (theodolite)
POSITION & ELEVATION

09 Tacheometry & total station
POSITION & ELEVATION

10 Traverse / traversing
POSITION & ELEVATION

11 Compass & plane-table methods
POSITION & ELEVATION

12 Error theory & statistics
ADJUSTMENT & GEODESY

13 Error propagation & weights
ADJUSTMENT & GEODESY

14 Adjustment (least squares)
ADJUSTMENT & GEODESY

15 Coordinate systems & projections
ADJUSTMENT & GEODESY

16 Area & volume computation
APPLICATIONS & GEODATA

17 Topography & terrain model (DTM)
APPLICATIONS & GEODATA

18 GNSS/GPS surveying (RTK)
APPLICATIONS & GEODATA

19 CAD for surveying
APPLICATIONS & GEODATA

20 Geographic information systems (GIS)
APPLICATIONS & GEODATA

21 Cartography & visualisation
APPLICATIONS & GEODATA

22 Setting-out & construction surveying
CONSTRUCTION, CADASTRE & SPECIAL

23 Route & road surveying
CONSTRUCTION, CADASTRE & SPECIAL

24 Cadastral & boundary surveying
CONSTRUCTION, CADASTRE & SPECIAL

25 Photogrammetry & UAV mapping
CONSTRUCTION, CADASTRE & SPECIAL

26 Hydrography & mine surveying
CONSTRUCTION, CADASTRE & SPECIAL

27 QA, standards & law
PROFESSION & COMPLETION

28 Entrepreneurial fundamentals
PROFESSION & COMPLETION

29 Final project (Capstone)
PROFESSION & COMPLETION

EQUIPMENT

Trained on instrument and terrain.



01

Measuring & processing instruments

Levels, theodolites, total stations and EDM for position and elevation.

02

Satellite surveying GNSS/RTK

GNSS base and rover, RTK, antennas and data radio.

03

Tripods, staffs, prisms & hand instruments

Tripods, staffs, reflectors and ranging poles, plus steel tape, measuring wheel, compass and clinometer.

04

Setting-out & construction laser technology

Rotating and construction lasers plus battery-board accessories for setting-out.

05

Photogrammetry, UAV & software

UAV/drone, camera and GCP, plus workstations, surveying software, CAD, GIS and plotter.

06

Field, PPE & calibration

Field equipment and personal protective equipment, plus calibration and test equipment to ISO 17123.

180+ POSITIONS · 6 CATEGORIES

BRING THE PROGRAMME TO YOUR LOCATION

LET'S GET STARTED.

AVAILABLE AS · Turnkey (Consulting + Equipment + Delivery + Curriculum + Setup)