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| **1- Identification of the Education Offer** |

***Level* :** **Licence (Bachelor)**

***Field :* Science and Technology**

***Branch* : Surveyor Topographer**

***Speciality* : Surveyor Topographer**

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| **2- Educational Establishment :** |

***Faculty/Institute:* Institute of Applied Sciences and Technology**

***Department:* Science Department**

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| **3- External partners** |

***Algerian Academic partners:***

* Land Registry Agency
* SEROR : Société d’Etude et Réalisation des Ouvrages d’Art de l’Ouest
* SOGERHWIT : Société Générale d’Etude et Réalisation Hydraulique de Tlemcen
* STARR : Entreprise des Travaux Publics
* LTPO : Laboratoire des Travaux Publics de l’Ouest
* LAB Analyse & Engineering Lae
* MHT Makteb EL Handassa Tlemcen
* Groupe Dennouni
* Union Générale des Entrepreneurs Algériens UGEA

***International partners :* Association of University Institute of Technology’s Directors (ADUIT) France**

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| **4- Context and objectives of the training:** |

The aim of this vocational degree is to train intermediate level executives to master the techniques, technology and management related to the fields of surveying and topography, with a pronounced culture of public works site management. They should be able to

* draw up environmental studies
* use town planning documents
* take part in a land reorganisation study
* carry out town planning studies
* take part in cadastral conservation
* drawing up co-ownership and volume divisions
* draw up planimetric and altimetric grids
* carry out planimetric and altimetric surveys and layouts
* process, use and manage geographical information
* plan, prepare and organise public works sites

This training project is a response to the needs expressed by Algerian land registry officials and public works companies. The programme for this vocational bachelor's degree is based on the general framework of national teaching programmes (PPN - France) for University Technology Diplomas (DUT), and on the framework defining vocational bachelor's degrees (LP).

In terms of the skills targeted, this project is based on those described in a training programme for senior technicians in "Surveying and Topography" as part of a Brevet de Technicien Supérieur (BTS) and on the "Planning, preparation and execution" of public works sites part of the national teaching programme for the DUT in "Civil Engineering - Sustainable Construction".

"Civil Engineering - Sustainable Construction" in France, as well as the recommendations and expertise of professionals in the sectors concerned.

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| **5- Facilities, Equipment and Laboratoires** |

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| No. | Designation | Quantity |
| Materials Strength Laboratory | | |
| 1 | A didactic bench on the deformation of  tensile beams, torsion | 1 |
| 2 | A didactic bench on beam bending | 1 |

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| Topography Laboratory | | |
| 1 | Opto-mechanical level with tripod and sights | 10 |
| 2 | Level of digital accuracy with tripod and  Target adapted to barcode | 02 |
| 3 | Rotary laser | 02 |
| 4 | Total station (tachometer) with laser lead | 06 |

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| Small equipment and accessories | | |
| 1 | Proteus Handheld Laser Distance Measurement  Minimum 80 meters (laser meter) | 08 |
| 2 | 360° prism | 01 |
| 3 | Transmitter – 3000 range portable receiver  Metres | 06 |
| 4 | 30-metre tape | 50 |
| 5 | Double-measuring ribbons | 20 |
| 6 | Milestone with tripod | 30 |
| 7 | surveyor's landmark (nail) | 200 |
| 8 | hammer | 30 |
| 9 | wooden stake | 50 |
| 10 | Simple optical square for right angle with  Milestone adapter | 08 |
| 11 | Optical connection bracket with adapter  milestone | 08 |
| 12 | tripod star ("spider") | 15 |
| 13 | Target support (point materialization)  "toad") | 20 |

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| Total Station | | |
| 1 | Total station (tachometer) with laser lead (Pack total station + tripod + telescopic prism rod + prism + 2 batteries +  charger) | 06 |

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| No. | Designation | Quantity |
| GPS for pivot + mobile work | | |
| 1 | GPS for pivot + mobile work: Pivot Pack  + Mobile + software + accessories (network to be defined) | 01 |

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| Computer Lab/Computer Graphics | | |
| 1 | an A0 plotter | 1 |
| 2 | A0 photocopier / scanner | 1 |
| 3 | Network mapping software | 1 |

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| Soil Mechanics Laboratory: Sampling and in-situ tests | | |
| 1 | Bit | 1 |
| 2 | Auger | 1 |
| 3 | Scissometer | 1 |
| 4 | Static and/or dynamic pocket penetrometer | 1 |
| 5 | Membrane densitometer | 1 |
| 6 | Mechanical compaction controller | 1 |

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| Soil Mechanics Laboratory: Laboratory Tests | | |
| 1 | .CBR | 1 |
| 2 | Modified Proctor | 1 |
| 3 | Particle size and sedimentometry | 1 |
| 4 | Pressure gauge | 1 |
| 5 | Shear box | 1 |
| 6 | Atterberg Boundaries | 2 |
| 7 | Densities: hydrostatic balance,  Test specimens | 1 |
| 8 | Permeameter | 1 |

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| Optics Laboratory | | |
|  | Wave characterization test bench | 1 |

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| **6- Profiles and Competencies Targeted** |

The Surveyor Topographer course provides students with the basic skills expected at this level of degree, mainly in the areas of technical and technological mastery and the associated management related to the profession of Surveyor Topographer working for an administration (land registry, town halls, etc.) or a public works company.

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| **7- Development Prospects and Employability** |

This training targets two main areas of activity: land management and public works companies.

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| **8- Organisation of the Semesters Teaching** |

**Semester 1:**

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| **Teaching Unit** | **WW** | **Weekly Workload** | | | | **Coeff** | **Credits** | **Evaluation method** | |
| **14-16 week** | **C** | **TD** | **TP** | **Other** | **Continuous** | **Examination** |
| ***Fundamental Teaching Units : FTU 11*** |  |  |  |  |  |  |  |  |  |
| Geodetic and geographic information | 28 | 16 | 12 |  | 10 | 2 | 2 | X | X |
| Linear and angular measurements | 63 | 15 | 15 | 33 | 20 | 5 | 5 | X | X |
| ***Fundamental Teaching Units : FTU 12*** |  |  |  |  |  |  |  |  |  |
| Reading map documents | 28 |  | 14 | 14 | 10 | 2 | 2 | X | X |
| Cartographic representation | 84 | 14 | 14 | 56 | 20 | 6 | 6 | X | X |
| ***Methodological Teaching Units : MTU 11*** |  |  |  |  |  |  |  |  |  |
| Optics and vibration | 28 | 7 | 14 | 7 | 10 | 2 | 2 | X | X |
| Geometry and curves | 45 | 21 | 24 |  | 15 | 3 | 3 | X | X |
| ***Discovery Teaching Units : DTU 11*** |  |  |  |  |  |  |  |  |  |
| Applied law and legislation | 28 | 21 | 7 |  | 10 | 2 | 2 | X | X |
| Applied geology and pedology | 28 | 21 | 7 |  | 10 | 2 | 2 | X | X |
| ***Transversal Teaching Units : TTU 11*** |  |  |  |  |  |  |  |  |  |
| Expression and communication 1 | 28 |  | 14 | 14 | 10 | 2 | 2 | X | X |
| Technical English 1 | 21 |  | 14 | 7 | 5 | 1 | 1 | X | X |
| ***Transversal Teaching Units : TTU 12*** |  |  |  |  |  |  |  |  |  |
| Professional and Personal Project of the student 1 | 15 |  | 15 |  | 15 | 1 | 1 | X |  |
| Tutored project 1 | 20 |  |  | 20 | 20 | 2 | 2 | X |  |
| **Total** | **416** | **115** | **150** | **151** | **155** | **30** | **30** |  |  |

**Semester 2:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Teaching Unit** | **WW** | **Weekly Workload** | | | | **Coeff** | **Credits** | **Evaluation method** | |
| **14-16 week** | **L** | **T** | **PW** | **Others** | **Continuous** | **Examination** |
| ***Fundamental Teaching Units : FTU 21*** |  |  |  |  |  |  |  |  |  |
| Basic canvas and topographic surveys | 77 | 14 |  | 63 | 15 | 5 | 5 | **X** | **X** |
| Topometric calculations | 63 | 21 | 42 |  | 20 | 5 | 5 | **X** | **X** |
| ***Fundamental Teaching Units : FTU 22*** |  |  |  |  |  |  |  |  |  |
| Structural design 1 | 28 | 14 | 14 |  | 10 | 2 | 2 | **X** | **X** |
| Urban planning instruments | 35 | 21 | 14 |  | 10 | 2 | 2 | **X** | **X** |
| ***Methodological Teaching Units : MTU 21*** |  |  |  |  |  |  |  |  |  |
| Analysis | 49 | 21 | 28 |  | 15 | 4 | 4 | **X** | **X** |
| Trigonometry | 42 | 21 | 21 |  | 14 | 3 | 3 | **X** | **X** |
| ***Discovery Teaching Units : DTU 21*** |  |  |  |  |  |  |  |  |  |
| Spreadsheets | 28 |  |  | 28 | 10 | 2 | 2 | **X** | **X** |
| ***Transversal Teaching Units : TTU 21*** |  |  |  |  |  |  |  |  |  |
| Expression and communication 2 | 28 |  | 14 | 14 | 5 | 2 | 2 | **X** | **X** |
| Technical English 2 | 21 |  | 14 | 7 | 5 | 1 | 1 | **X** | **X** |
| ***Transversal Teaching Units : TTU 22*** |  |  |  |  |  |  |  |  |  |
| Internship 1 (4 weeks) |  |  |  |  |  | 2 | 2 | **X** |  |
| Tutored project 2 | 20 |  |  | 20 | 20 | 2 | 2 | **X** |  |
| **Total** | **391** | **112** | **147** | **132** | **124** | **30** | **30** |  |  |

**Semester 3:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Teaching Unit** | **WW** | **Weekly Workload** | | | | **Coeff** | **Credits** | **Evaluation method** | |
| **14-16 week** | **L** | **T** | **PW** | **Others** | **Continuous** | **Examination** |
| ***Fundamental Teaching Units : FTU 31*** |  |  |  |  |  |  |  |  |  |
| Connections | 63 |  | 18 | 45 | 15 | 4 | 4 | **X** | **X** |
| Exploitation of plans | 28 |  | 7 | 21 | 10 | 3 | 3 | **X** | **X** |
| ***Fundamental Teaching Units : FTU 32*** |  |  |  |  |  |  |  |  |  |
| Cadastre | 28 | 21 | 7 |  | 10 | 2 | 2 | **X** | **X** |
| Land development | 42 | 21 | 21 |  | 15 | 3 | 3 | **X** | **X** |
| Soil | 42 | 14 | 14 | 14 | 10 | 3 | 3 | **X** | **X** |
| ***Methodological Teaching Units : MTU 31*** |  |  |  |  |  |  |  |  |  |
| Structural design 2 | 35 | 14 | 14 | 7 | 15 | 3 | 3 | **X** | **X** |
| Hydraulics | 28 | 14 | 14 |  | 10 | 2 | 2 | **X** | **X** |
| ***Discovery Teaching Units : DTU 31*** |  |  |  |  |  |  |  |  |  |
| Construction Management | 28 |  | 28 |  | 10 | 2 | 2 | **X** | **X** |
| Business economics and management | 28 | 21 | 7 |  | 10 | 2 | 2 | **X** | **X** |
| ***Transversal Teaching Units : TTU 31*** |  |  |  |  |  |  |  |  |  |
| Expression and communication 3 | 28 |  | 14 | 14 | 10 | 2 | 2 | **X** | **X** |
| Technical English 3 | 21 |  | 14 | 7 | 5 | 1 | 1 | **X** | **x** |
| ***Transversal Teaching Units : TTU 32*** |  |  |  |  |  |  |  |  |  |
| Professional and Personal Project of the student 2 | 15 |  | 15 |  | 15 | 1 | 1 | **X** |  |
| Transversal tutored project: surveyor-topographer | 20 |  |  | 20 | 20 | 2 | 2 | **X** |  |
| **Total** | **406** | **112** | **173** | **121** | **155** | **30** | **30** |  |  |

**Semester 4:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Teaching Unit** | **WW** | **Weekly Workload** | | | | **Coeff** | **Credits** | **Evaluation method** | |
| **14-16 week** | **L** | **T** | **PW** | **Others** | **Continuous** | **Examination** |
| ***Fundamental Teaching Units : FTU 41*** |  |  |  |  |  |  |  |  |  |
| Data processing | 42 |  | 21 | 21 | 15 | 4 | 4 | **X** | **X** |
| Implantation | 35 |  |  | 35 | 5 | 3 | 3 | **X** | **X** |
| ***Fundamental Teaching Units : FTU 42*** |  |  |  |  |  |  |  |  |  |
| Work planning | 35 |  | 14 | 21 | 10 | 2 | 2 | **X** | **X** |
| Foundations and retaining structures | 28 | 21 | 7 |  | 10 | 2 | 2 | **X** | **X** |
| ***Methodological Teaching Units : MTU 41*** |  |  |  |  |  |  |  |  |  |
| Probability and descriptive statistics | 42 | 21 | 14 | 7 | 15 | 4 | 4 | **X** | **X** |
| Digital Suites | 28 | 14 | 14 |  | 10 | 2 | 2 | **X** | **X** |
| ***Discovery Teaching Units : DTU 21*** |  |  |  |  |  |  |  |  |  |
| Eco-construction and environmental law | 28 | 28 |  |  | 10 | 2 | 2 | **X** |  |
| ***Transversal Teaching Units : TTU 41*** |  |  |  |  |  |  |  |  |  |
| Expression and communication 4 | 28 |  | 21 | 7 | 10 | 2 | 2 | **X** | **X** |
| Technical English 4 | 21 |  | 14 | 7 | 5 | 1 | 1 | **X** | **X** |
| Internship 2 (8 weeks) |  |  |  | 10 | 30 | 8 | 8 | **x** |  |
| Total | **280** | **84** | **105** | **96** | **110** | **30** | **30** |  |  |

#### **Semester 5**:

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Teaching Unit** | **WW** | **Weekly Workload** | | | | **Coeff** | **Credits** | **Evaluation method** | |
| **14-16 week** | **L** | **T** | **PW** | **Others** | **Continuous** | **Examination** |
| ***Fundamental Teaching Units : FTU 51*** |  |  |  |  |  |  |  |  |  |
| Geomatics and computer graphics | 84 |  | 24 | 60 | 20 | 5 | 5 | **X** | **X** |
| Advanced technologies | 84 | 42 | 14 | 28 | 25 | 5 | 5 | **X** | **X** |
| ***Fundamental Teaching Units : FTU 52*** |  |  |  |  |  |  |  |  |  |
| Construction technology | 42 | 21 | 7 | 14 | 15 | 3 | 3 | **X** | **X** |
| Roads and miscellaneous networks | 49 | 21 | 21 | 7 | 15 | 4 | 4 | **X** | **X** |
| ***Methodological Teaching Units : MTU 51*** |  |  |  |  |  |  |  |  |  |
| Preparation of work | 28 |  | 28 |  | 10 | 3 | 3 | **X** | **X** |
| Site management | 28 |  | 28 |  | 10 | 3 | 3 | **X** | **X** |
| ***Discovery Teaching Units : DTU 51*** |  |  |  |  |  |  |  |  |  |
| Entrepreneurship and business plan | 35 | 7 | 14 | 14 | 10 | 2 | 2 | **X** | **X** |
|  |  |  |  |  |  |  |  | **X** | **X** |
| ***Transversal Teaching Units : TTU51*** |  |  |  |  |  |  |  |  |  |
| Expression and communication 5 | 35 |  | 21 | 14 | 10 | 3 | 3 | **X** | **X** |
| Transversal tutored project: public works | 30 |  |  | 30 | 20 | 2 | 2 | **X** |  |
| **Total** | **415** | **91** | **150** | **167** | **135** | **30** | **30** |  |  |

**Semester 6:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Teaching Unit** | **WW** | **Weekly Workload** | | | | **Coef** | **Credits** | **Evaluation method** | |
| **14-16 week** | **L** | **T** | **PW** | **Others** | **Continuous or**  **Written report** | **Examination or**  **Defence** |
| ***Transversal Teaching Units : TTU6*** |  |  | |  |  |  |  |  | |
| INTERNSHIP 3 (12 weeks) |  |  | | 10 | 90 | 18 | 18 | **x** | **x** |
| PFE Project (3 to 4 weeks) |  |  | | 60 | 30 | 12 | 12 | **x** | **x** |
| Total |  |  | | 70 | 120 | 30 | 30 |  |  |