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

***Level*: Master**

***Field : Génie Civil***

***Branch* :** ***Public Works Sectors***

***Speciality* :** ***Roads and Engineering Structures***

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| **2-Educational Establishment :** |

***Faculty/Institute:*** ***TECHNOLOGY***

***Department:*** ***CIVIL ENGINEERING***

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| **3-External partners** |

***Algerian Academic partners:***

***Companies and other socio-economic partners*: company SEROR, company STARR**

***International partners :***  **Laboratory I2E University Bordeaux France**

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

The purpose of this training is to provide students with a versatile training in the Public Works sector (road and motorway infrastructure, railway network, airfields, port and airport infrastructure). This training also offers the possibility for students who have successfully completed their studies to continue their post-graduation studies to access the doctoral degree in specific specialties.

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

* Material identification and quality control tests (steel, metal, wood, concrete, cement, plaster, etc.)
* Static and dynamic tests on reduced or actual scale on structural systems.
* Testing of innovative materials and products in the field of construction.

Laboratories : EOLE, RISAM.

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

* Road and motorway infrastructure,
* Railway network,
* Airfields,
* Port and airport infrastructure,
* Bridges,
* Geotech

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

* Conduct of works in the public sector (local authorities, national administration);
* Design and calculation of structures (design offices);
* Control and monitoring of works (control offices);
* Monitoring and execution of works (companies).
* Geotechnical investigation (laboratory)
* Design offices (public and private)
* The technical services of the APC, Dairates, Wilayates.
* Production companies (public and private)
* Control offices

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| **8-Organisation of the SemestersTeaching** |

* **Semester 1**
* **Fundamental teaching units**
* Elasticity theory
* Structural dynamics
* Sizing of bridges
* Road sizing
* **Methodological teaching unit**
* Reinforced concrete works project
* Programming tutorial
* Practical work Software applied to roads
* **Cross-curricular teaching unit**
* Technical English and Terminology
* **Discovery Teaching Unit**
* Project management
* Communication
* Road Geotechnics
* **Semester 2**
* **Fundamental teaching units**
* Plasticity theory
* Dimensioning of bridges 2
* Prestressed concrete
* Metal constructions
* **Methodological teaching unit**
* Finite element methods
* Roads project
* Practical work Geographic Information Systems (S.I.G)
* **Cross-curricular teaching unit**
* Ethics, deontology and intellectual property
* **Discovery Teaching Unit**
* Natural and technological risks
* **Semester 3**
* **Fundamental teaching units**
* Advanced Bridge Designs
* Underground works
* Railroads
* Airfields
* Pathology and rehabilitation of OA
* Methodological teaching unit
* Advanced Geotechnics
* Digital Modeling of Bridges
* Organization and site visits
* **Cross-curricular teaching unit**
* Documentary research and dissertation design
* **Discovery Teaching Unit**
* Ways and Works of art
* Hydrology
* **Semester 4**

The S4 semester is reserved for the end-of-study research initiation project, culminating in a dissertation and a thesis defense.