

الجمهورية الجزائرية الديمقراطية الشعبية
Republique Algérienne Démocratique Et Populaire

وزارة التعليم العالي والبحث العلمي
Ministère De L'enseignement Supérieur Et De La Recherche Scientifique

Université Abou Bekr Belkaid Tlemcen
ⵜⴰⵎⴰⵎⴻⵔⴰⵏ ⵜⴰⵎⴰⵎⴻⵔⴰⵏ ⵜⴰⵎⴰⵎⴻⵔⴰⵏ

Vice Rectorat de la Formation Supérieure de Graduation, de la
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جامعة أبو بكر بلقايت تلمسان
نيابة مديرية الجامعة

للتكوين العالي في التدرج والتكوين
المتواصل والشهادات

1-Identification of the Education Offer

Level: License, Master

Field : Earth and Universe Sciences

Branch : Geology

Speciality : Hydrogeology, Geo-resources, geology of sedimentary basins

2-Educational Establishment :

Faculty/Institute: Natural and Life Sciences and Earth and Universe Sciences

Department: Earth and Universe Sciences

3-External partners

Algerian Academic partners:

Companies and other socio-economic partners: SONATRACH ; CRAAG ; Schlumberger ; National Aggrerates Entreprise (E.N.G.) ; Algerian Institute of Mines ; El Abed Mining School ; Algerian Space Agency (ASAL) ; Astronomy Astrophysics and Geophysics Research Center (CRAAG) ; Road Earthworks, Development and Paving Company (STAAR) ; SARL PADE ; Western Public Works Laboratory – Tlemcen (LTPO) ; National Agency for Mining Activities (ANAM) ; Cement Industrial Group of Algeria (GICA)

International partners :



4-Context and objectives of the training:

The essential objective expected from this training (license academic geology and Applied geology) is to instill in the student the fundamental principles and theoretical knowledge relating to the dynamics and constituents of the earth. Students will have notions on the different methods and tools of geology. The holder of this diploma must have the necessary background to tackle development projects.

The aim is to train graduates in geology capable of mapping a region, reading geological reports, determining samples in order to determine the possibility of a deposit for example or simply giving an opinion on the realization of works (construction, civil engineering, etc.) on a given piece of land (thus avoiding problems of landslides, unbuildable areas such as wadis, etc.)

1- The Academic Masters of hydrogeology aims to train managers who, in the fields of hydrology and hydrogeology, will be able to contribute to an optimal management of the resource to starting from a proven understanding and mastery of the surrounding environment, framing in this with the environmental issues addressed by environmental professionals (Companies, Design Office, etc.).

2- The Professional Master's Degree "Geo Resources" aims:

- Train specialists who are familiar with the various processes (Remote Sensing and Geographic Information System) used today in the exploration and exploitation of geo-resources;
- To teach students about applications of geological syntheses in the exploration and exploitation of natural resources (water, hydrocarbons, minerals and useful substances);
- Students to a degree of autonomy to develop appropriate solutions to soil and subsoil resource management problems;
- Make students aware of the professional environment through internships.

3- The Academic Masters of geology of sedimentary basins: This course is open to students who have successfully completed the following courses:

Fundamental geology; Sedimentary geology; Petrology-tectonic; Mining geology; Petroleum geology.

The main objective is to train Field Geologists capable of joining the multidisciplinary teams required by any company or organization involved in research, mining, useful substances and hydrocarbons. They can also work in public works, land-use planning and the environment.

Thanks to solid basic training (theoretical and practical) provided for the most part by the department's teaching staff, students will be accustomed to practical fieldwork and geological mapping (sedimentary, magmatic and metamorphic).



5-Facilities, Equipment and Laboratoires

Available human resources: twenty-three teachers participate in the licenses and master's degree (hydrogeology, geo-resource, geology of sedimentary basins).

Pedagogical Laboratories and Equipment:

- Laboratory title: Spectrochemistry and Structural Pharmacology.
- Laboratory name: Application of Organic Electrolytes and Polyelectrolites.
- Laboratory (N°25): Water, Mining and Soil Resources, Technological Choice and Environmental Legislation.

- 01 JR6 Magnetometer
- 01 Susceptibilimeter magnetic
- 01 Demagnetizer with double thermal chambers
- 01 Micro-Electric Saw
- 01 Chainsaw for rocks
- 01 Multi-plate grinding machine
- 01 Polisher
- 01 Polarizing microscope
- 01 Loupe binoculaire
- 01 Fluorescence Spectrometer, SHIMADZU RF-1501
- 01 Gamma Spectrometer, CANBERRA SMT/MP
- 01 HPLC Chromatography, SHIMADZU LC-10 ADVP
- 01 Muffle oven 1300 C, Vecstar Furnaces
- 01 FTIR Spectrometer, Perkin Elmer
- 01 FED 115 L, T= 300°C. BINDER FED 115
- 01 Distillator 4 L/H, Sklarny Kavalier
- 01 4 l/h water distiller
- 01 Rotavopors Buchi
- 03 Magnetic stirrers
- 01 Kofler Bench 50/260
- 01 Shimadzu and PC spectrofluorometer
- 01 UV-Visible Spectrometer and PC
- 01 p meter
- 01 Conductivity meter
- 01 Centrifuge
- 01 Furnace with muffle T=1300°C, V=7.7 L
- 01 FED case 115 T=300 C
- 01 Freezer 390 L
- 01 Ariston 428 L ECR Fridge



6- Targeted Profiles and Competencies

The main skills acquired by the students leaving the “license, masters” specialty are:

1. Organizational and relational skills

The Master's graduate has a multidisciplinary culture.

He is able to manage projects in groups, has a great autonomy of work and good synthesis and decision-making capacities. He becomes capable of:

- Carrying out scientific studies, with a view to design and application;
- Collecting and interpreting data;
- Addressing and solving problems taking into account the context and objectives, collecting data, carrying out measurements and interpreting results;
- Formalizing the analyses and measurements results by the means of reports and publications;
- Communicating: draft, prepare communication materials and present them in French and English.
- Mastering the regulatory aspects of any environmental study and ensuring hygiene, safety, quality and environment within the company.
- Preventing health and safety risks of stakeholders and the public;
- Piloting and coordinating projects;
- Implementing a quality assurance plan within the company.

2. General and specific scientific skills

The Master's graduate also possesses, specific scientific skills, acquired during his master's degree such as:

- Geo-resource exploration and development (water, mining and oil);
- Implantation and monitoring of water boreholes and oil and mining boreholes;
- Geo-resource mapping;
- Geo-resource global management (water, minerals and hydrocarbons);
- Management of geological and geotechnical risks, etc...
- Management of geological and geotechnical risks, hydrogeological etc ...
- The estimation, mobilization and global and integrated management of water resources.
- The assessment and preservation of water quality, as well as the management of water-related risks.



7-Development Prospects and Employability

These licenses and master's degrees aim to prepare future graduates capable of integrating into professional life:

- Hydrocarbons (SONATRACH or any other multinational oil company);
- Water resources (Hydraulics Directorates, Hydraulic Resources National Agencies, National Dam Agencies, Watershed Agencies, Desalination plants, National Sanitation Offices);
- Mines (ORM, Mining Services);
- Quarries (ENG, private sector, etc.);
- Environmental inspections.

8-Organisation of the Semesters Teaching

1 / Common base lessons L1 to L2:

- L1, S1 (1st semester)
- L1, S2 (2nd semester)
- L2, S3 (3rd semester)
- L2, S4 (4th semester)

2 / specialization lessons L3:

• Common lessons

- L3, S5 (5th semester):

• Optional courses S6: Optional units:

- L3, S6 (5th semester): General geology, Applied geology

- For masters the course comprises four semesters. The first three semesters include fundamental, methodological, discovery and cross-disciplinary teaching units. The fourth semester is devoted exclusively to writing a final dissertation.