



Periodical Report
18 Months of project
implementation

**New Curricula in
Precision Agriculture
Using GIS Technologies
and Sensing Data**

**DJILLALI LIABES UNIVERSITY OF
SIDI BEL-ABBES**



Co-funded by the
Erasmus+ Programme
of the European Union

Joint Project: Capacity Building in the Field
of Higher Education ERASMUS+ 2018

**KADOUN Abd-Ed-Daïm, Prof. , Vice-rector
CHIKR ELMEZOUAR Miloud, Associate Prof.
DJELLOILI Riad, Teacher**

PROJECT ACTIVITIES – FROM NOVEMBER 2019 TILL MAY 2020

The university has implemented the following activities according to the work plan:

WP1:

Updating the following courses:

- ✓ Biomathématiques et analyse des données
- ✓ Communication
- ✓ Agressions et santé des plantes cultivées
- ✓ Technologies Web
- ✓ Législation
- ✓ Cultures maraîchères spéciales
- ✓ Agrumiculture
- ✓ Technique de recherche bibliographique et rédaction.
- ✓ Entrepreneuriat

PROJECT ACTIVITIES – FROM NOVEMBER 2019 TILL MAY 2020

WP2: WP2.1

The workgroup with the department staff :

- 1- Appointed the responsible of the master for the coordination purposes.
- 2- Selected teachers responsible for the development of the Master courses and curricula. Three of these teachers were involved in Berlin 2019 summer training and six of them will attend the two next trainings, postponed due to COVID-19.

PROJECT ACTIVITIES – FROM NOVEMBER 2019 TILL MAY 2020

WP2: WP2.1

The new courses are in accordance with the Bologna recommendations course description in French and English languages.

The developed Master program is already accredited in accordance with valid University rules. But it still must be approved at national level.

The necessary work to the national accreditation is completed and all the documents were sent to Cupagis national coordinator. However, due to Covid-19 pandemic, we don't have yet the final decision from the ministry.

PROJECT ACTIVITIES – FROM NOVEMBER 2019 TILL MAY 2020

WP2: WP2.2

The required rooms, where equipment will be installed, were reserved and their layouts were sent to P5.

The choice of equipment was not so easy. Many local and national meetings were conducted on the zoom platform in order to consult specialists on the adequate equipment for the precision agriculture.

The list of equipment, which is the same for all Algerian partners, was sent to the project coordinator.

PROJECT ACTIVITIES – FROM NOVEMBER 2019 TILL MAY 2020

WP2: WP2.3

A list of teachers that will participate in the two next trainings according to the selection criteria was established and sent to P5 in order to coordinate the organization of the trainings. However due to the Covid-19, one of the two trainings was postponed to 2021.

PROJECT ACTIVITIES – FROM NOVEMBER 2019 TILL MAY 2020

WP3

Dr. N. Talha, UDL teacher, is accompanying the workgroup and the Master team to ensure a good quality in project achieving. Hence, she continuously collected data to ensure that required actions are correctly and efficiently implemented; and ensured the quality of the data collected.

All times, the activities related to meetings, milestones, deadlines, schedules ... are supervised by Dr. Talha.

PROJECT ACTIVITIES – FROM NOVEMBER 2019 TILL MAY 2020

WP4

- A new brochure was designed to inform the students about the new Master of Precision Agriculture. However due to the COVID-19 pandemic, dissemination meetings were not possible.

This activity is postponed to next September.

PROJECT ACTIVITIES – FROM NOVEMBER 2019 TILL MAY 2020

WP5

Two bilateral agreements were signed.

- The first agreement is between UDL university and the non-academic partner “Institut Technique des Grandes Cultures (ITGC)”.
- The second one is also signed with a non-academic partner: “Institut National de la Recherche Agronomique d'Algérie (INRA)”.

New Courses development process

Title of the course

Remote sensing and application of earth and environment related to precision agriculture

Les SIG en agriculture de précision I

Soil properties and its measurement

Basics of the Precision agriculture – characteristics, technologies, economic efficiency, optimal use of resource

Intensives courses to leverage acceptance of new technologies “in field”.

Course of sentinel 1 2 3 imagery for agriculture field

Les SIG en agriculture de précision II

Application of Precision Agriculture for crops growing

Sensors In Precision Agriculture

Mechanization in precision farming

Start-up initiatives for future farmers

جامعة جيلالي ليايس
سيدا بلعباس



Université
DJILLALI LIABES
Sidi Bel-Abbès

Curricula descriptions

Curricula descriptions (CD) for each new course are uploaded to:

<https://onedrive.live.com/?id=B11CE30B22C3AACD%211624&cid=B11CE30B22C3AACD>

TEACHING MATERIALS

No	Title of the materials	Type	Short description
1	Initiation à la protection des plantes cultivées	Polycopié	Connaissances des principales agressions causées soit par le ou les agents causaux d'une pathologie donnée, ou les dégâts occasionnés par des animaux de différents groupes, en relation avec les troubles physiologiques qui sont les conséquences des conditions abiotiques comme les paramètres climatiques, édaphiques et de la qualité de la nutrition des plantes cultivées. Conception d'une stratégie pour la prévention et le contrôle de tous facteurs pouvant entraîner une perte économique de la production.
2	Soil properties and its measurement	Course handout	This course aims to improve, complete and deepen the knowledge in soil science acquired beforehand in a bachelor's degree, learning different methods of measuring the physical and chemical soil properties, learning how to interpret, analyze and synthesize a series of data collected following the analysis of different physical and chemical soil parameters, learning to diagnose the condition of the soil, learning to identify the heterogeneities of soil cover in the context of precision farming.

TEACHING MATERIALS

No	Title of the materials	Type	Short description
3	L'agriculture de précision : Applications et perspectives en grandes cultures et prairies	Manuel	Ce document va permettre à l'étudiant de connaître La démarche de l'agriculture de précision : 1. Acquisition de données sur l'hétérogénéité de la parcelle 2. Transfert et stockage des données 3. Visualisation et analyse de données 4. Décisions techniques : cartes de préconisation 5. Modulation des actions
4	l'entrepreneuriat et l'agriculture	polycopié	apprendre à interpréter, analyser et synthétiser une série de données collectées pour pouvoir créer leur propre star'ups dans le domaine agroalimentaires
5	Web technologies	Course handout	This course provides a basic overview and understanding of many key Web technologies without delving into programming.... CSS, scripting, and interactive Web pages. Web and application servers, PHP, content management systems. Rich Internet Applications and multimedia.

TEACHING MATERIALS

No	Title of the materials	Type	Short description
6	réglementations et législations Algérienne dans le domaine de l'agronomie et dans l'utilisation des nouvelles technologie	Polycopié	Dissertations et lecture des textes et réglementations régissant l'agronomie et l'utilisation des TIC dans ce domaine.
7	Statistique et échantillonnage	Polycopié	Ce polycopie s'adresse aux étudiants du 1ère année Master biologie, afin d'être utilisé comme complément à un cours de base dans différents domaines statistiques (estimation, échantillonnage, théorie de la décision). Le but de ce cours est d'étendre les propriétés de l'échantillon à la population entière et de valider ou de rejeter des hypothèses à priori ou formulées après une étape descriptive.
8	Sensors In Precision Agriculture	Manual	The manual will provide information about sensors for Precision Agriculture. It will cover the basic principles of metrology and conditioning electronics, physical principles of optical, thermal and magnetic sensors, sensor data processing and integration of sensor information in the global farm management. Sensors for different cultivated crops and soil are considered. The problematics related with sensors precision, use and calibration is also studied.

TEACHING MATERIALS

No	Title of the materials	Type	Short description
9	Analyse des données	Polycopié	<p>Lors de toute étude statistique, il est nécessaire de décrire ou d'explorer les données avant de tirer les lois ou modèles prédictifs. Dans beaucoup de situations, les données sont trop nombreuses pour pouvoir être visualisables (nombre de caractéristiques trop élevées). Il est nécessaire alors d'extraire l'information pertinente qu'elles contiennent; Les techniques d'analyse des données (ADD) répondent à ce besoin.</p> <p>On développera ici les différentes méthodes d'ADD (ACP, AFC, AMC, AC et ACG).</p>
10	Basics of the Precision: agriculture – characteristics, technologies, economic efficiency, optimal use of resources	Course handout	<p>The technologies and equipment of precision farming; the basic principles of cartography, remote sensing and geographic information systems (GIS); technological tools such as software and hardware (GPS, embedded sensors, variable input rate applicator, etc.) used in precision farming, geospatial and mapping data useful for precision farming; methods of producing useful information from geospatial data; understanding and analysis of geospatial information on soils and crops.</p>
11	Sentinel 123 image processing	manuel	<p>In this manual, a chain of satellite image processing using free software libraries is proposed, to estimate biophysical parameters using data from the Sentinel satellite. In particular, the processing chain proposed allows atmospheric correction, resampling.</p>

QUALITY ASSURANCE OF THE NEW COURSES

Peer reviewers (Name, position, organization)

1. HOUCINE Samira

Teacher,

Responsible for the QA Office

and Head of the Center of Intensive Languages Teaching

UDL university.

2. TALHA Nora

Teacher,

Faculty of Law

UDL university.

IMPACT AND SUSTAINABILITY

DISSEMINATION EVENTS-1 (THAT ARE NOT MENTIONED IN REPORT 12M/ FROM NOVEMBER 2019 TILL MAY 2020)

1	How many dissemination events were conducted?	<ul style="list-style-type: none">• No event was conducted
2	How much and which new dissemination materials were produced (leaflets, brochures, flyers etc)?	<ul style="list-style-type: none">- Send us prepared/published E-layouts or drafts of brochures and leaflets;• A new brochure is produced.- Inform us about the dates of approximate printing, publishing and distribution of brochures and leaflets.• After COVID-19 pandemic

IMPACT AND SUSTAINABILITY

DISSEMINATION EVENTS-1 (THAT ARE NOT MENTIONED IN REPORT 12M/ FROM NOVEMBER 2019 TILL MAY 2020)

3 Report on the dissemination of the information about the project in mass media

- Send us links or scans/files of publications about the project in mass media: magazines, newspapers, TV, the Internet, etc., with the date of their publications.
- The dissemination of the information about the project is published on the Facebook UDL project page and on the website of the university
- If they are not published yet, inform us when you are planning to publish them.
- Newspapers publication is planned before September 2020.

4 Planned dissemination activities

- Please, send us the plan of future dissemination activities until November 2020
- Dissemination plan is provided in a separate file

NON-ACADEMIC PARTNERS (found from November 2019 till may 2020)

NON-ACADEMIC PARTNERS (FOUND FROM NOVEMBER 2019 TILL MAY 2020)

No	Question	Answer
1	Please, provide a list of non-academic partners and organizations outside the project, with which you maintain communication and which could be interested in hiring your graduates	<p>List of non-academic partners and organizations:</p> <ol style="list-style-type: none"> 1. Institut Technique des Grandes Cultures (ITGC) 2. Institut National de la Recherche Agronomique d'Algérie (INRA)
2	Please, provide information regarding the planned dissemination events for the interested in the project stakeholders, non-academic partners and organizations outside the project.	<ul style="list-style-type: none"> - Inform us about the planned date of the next event. If the event has already taken place, send us its press release; • Not yet defined because of covid-19 pandemic
3	University – enterprise agreements	<ul style="list-style-type: none"> - Scan the signed university – enterprise agreements • Signed and scanned agreements were already P5.



Thank you for your attention



Co-funded by the
Erasmus+ Programme
of the European Union

KADOUN Abd-Ed-Daim, Prof. , Vice-rector, akadoun@yahoo.com
CHIKR ELMEZOUAR Miloud, Associate Prof. , chikrelmezouar@gmail.com
DJELLOULI Riad, djellouli_riad@yahoo.fr