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

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

***Field :* Natural and Life Sciences**

***Branch* : Agricultural Sciences**

***Speciality* :** **Essential and Vegetal Oil Technologies**

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| **2- Educational Establishment :** |

***Faculty/Institute:* Faculty of Natural and Life Sciences and Earth and Universe Sciences | Institute of Applied Sciences and Technology**

***Department:* Science Department**

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| **3- External partners** |

***Algerian Academic partners:***

- ISTA - University of Tlemcen, Algeria

- IUT - University of Perpignan, France

***Companies and other socio-economic partners*:**

- PPAM&HE Algeria Consortium

- Forum des Chefs d'Entreprises (FCE) - Algiers

- National Federation of Plant and Natural Product Professionals - Algiers

- Cluster of Beverage Producers - Bejaia

- CEVITAL Group (Agro-industries) - Bejaia

- SAIDAL (Pharmaceuticals) - Algiers

- BIOPHARM (Pharmaceuticals) - Algiers

- SPA BIOPAM (Agro-industries) - Algeria

- Filaha Innove Foundation - SIMA-SIPSA Exhibition - Algiers

- Fondation Djanet El Arif - Mostaganem

- SARL Mesk el yamen (essential and vegetable oils) - Oued Souf

- AFFEE (Plants) - Sétif

- ETS KHERBOUCHE (Agro-industries, Agricultural equipment) - Tlemcen

- Groupe BOUBLENZA (Agro-industries) - Tlemcen

- Entreprise REPI (Agroéquipements) - Algiers

- SARL Herbaloil (Essential oils) - Tlemcen

- SARL Biophytal (Essential oils) - Tlemcen

- Aromest (Essential and vegetable oils) - Annaba

- Zeephebio (Essential and vegetable oils) - Bouira

- Bio Sources (Agro-industries) - Algiers

- SARL SAPHY International (Essential Oils) - Tipaza

- SARL SAPHY International (Vegetal Oils) - Tindouf

- SARL Zouyout (Essential and vegetable oils) - Jijel

- Nopaltec (Vegetable oils) - Souk Ahras

- SARL Ilefbio (Vegetable oils) - Tébessa

- Dar El Aacheb (Herbalism) - Oran

- SARL Agrimax (Agro-industries) - Tiaret

- SARL Algbiotech (Agro-industries) - Adrar

- Biopower (Agro-industries) - Ourgla

- Pépinière Benaissa (Plans) - Blida

- Tlemcen National Park - Tlemcen

- Tlemcen Chamber of Agriculture - Tlemcen

- National Chamber of Agriculture - Algiers

- Tlemcen Forest Conservation

- Directorate General of Forests - Algiers

- Bureau National d'Etude pour le Développement Rural (BNEDER) - Algiers

International partners :

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

The aim of this vocational degree is to train middle managers for small and medium-sized companies, as well as for large agri-food groups, with expertise in the fields of:

- Perfumed, aromatic and medicinal plants (PPAM) for small-scale or industrial use;

- Oilseed and condiment plants;

- conventional and organic plant cultivation

- Plant processing for herbal medicine;

- Production and characterisation of essential oils;

- Production and characterisation of vegetable oils;

- Chemistry and biochemistry of oils;

- Analytical sciences, quality control and certification;

The originality of the course therefore lies in the mastery of the entire production chain in the PPAM sector and processed products, i.e. fresh and dried plants, essential oils and vegetable oils, as well as quality control.

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

**PEDAGOGICAL FACILITIES**

|  |  |  |  |
| --- | --- | --- | --- |
| Training  | Designation  | Quantity | Source |
|
| (COFFEE) | Technology hall | 1 | ISTA  |
| Extraction line for essential oils | 1 | ISTA |
| Vegetable oil extraction line | 1 | ISTA |
| Juice extraction line | 1 | ISTA |
| Solar dryer | 1 | ISTA |
| Experimental greenhouse - Nursery | 2 | Vocational Training Centre (Tlemcen)  |
| Professional greenhouse | 1 | ISTA |
| Experimental plot | 2 hectares | ISTA |
| Cultivation plot | 20hectares | Consortium PPAM&HE Algeria (Tlemcen) |
| Chemistry laboratory | 3 | ISTA |
| Biology laboratory | 4 | ISTA |
| Agronomy laboratory | 2 | ISTA et UoT |
| Botany and Genetics Laboratory | 2 | LEGEN et PPBIONUT (UoT) |
| Structural analysis laboratory | 1 | LCSCO (UoT) |
| Physico-chemical analysis laboratory | 1 | COSNA (UoT) |
| Biological analysis laboratory | 1 | LAMAABE (UoT) |
| Plans and seeds |  | Tlemcen Chamber of Agriculture |
| Tlemcen Agricultural Services Department |
| Tlemcen National Park |
| Conservatoire des Forêts de Tlemcen Private Nursery |
| Classrooms | 4 | ISTA |
| Library | 1 | ISTA |

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

This course will enable students to acquire technical knowledge grouped around three main themes:

 **Professional skills :**

* Integration into a work team. Organising tasks.
* Taking responsibility and initiative.
* Critical analysis of the production and processing system in order to provide effective solutions.
* Ensuring a quality research approach.

**Methodological skills**

* Manage an oil plant production system.
* Choosing the techniques best suited to adding value to RTE plants.
* Knowing the constraints of a farm and complying with customer specifications.

**Technical skills :**

* Identify, grow and protect plants of interest.
* Know the different agricultural techniques for cultivated plants.
* Master extraction processes and analysis techniques to be able to interpret results.
* Master the storage and packaging stages.

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

The level jobs targeted on completion of the course are:

* Manager.
* Team leader, production unit or workshop manager, manufacturing supervisor.
* Assistant engineer or controller in research laboratories.

- Head of PPAM cultivation (A1202).

- PPAM development researcher (A1701).

- PPAM food processing technician (A2101).

- PPAM pharmaceutical processing technician (A2300).

- Quality control and physico-chemical analysis technician (A1503).

**This professional may work on :**

- Farm.

- Agricultural processing company.

- Essential and/or vegetable oil production company.

- Quality control laboratory.

- Design office.

- Audit and certification office.

- Chambers of agriculture, commerce and industry.

- Forest conservation;

- Directorate of Agricultural Services.

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

**Semester 1 :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Teaching Unit | Topics | SWL | SWL | Weekly Workload | Coef. | Credits | Assessment method |
| Total face-to-face | Total students | L | T | PW | Personal Work | H. study supervision | Supervision hours / practical work groups | C: continuous R: written reportS: oral defence |
| Fundamental Teaching Units FTU |  |  |  |  |  |  |
| FTU 1 - 1 | Plant biology | 88 | 123 | 28 | 36 | 24 | 35 |  |  | 6 | 6 |  |
| Plant ecology | 66 | 96 | 22,5 | 22,5 | 21 | 30 |  |  | 4,5 | 4,5 |  |
| FTU 1 - 2 | Solution chemistry | 63 | 98 | 22,5 | 22,5 | 18 | 35 |  |  | 4,5 | 4,5 |  |
| Pedology | 66 | 96 | 22,5 | 22,5 | 21 | 30 |  |  | 4,5 | 4,5 |  |
| Methodological Teaching Units MTU |  |  |  |  |  |  |
| MTU 1 - 1 | Statistics and information technology | 31,5 | 46,5 | 15 | 9 | 7,5 | 15 |  |  | 2,5 | 2,5 |  |
| Water resources and irrigation | 30 | 45 | 15 | 7,5 | 7,5 | 15 |  |  | 2,5 | 2,5 |  |
| Discovery Teaching Units DTU |  |  |  |  |  |  |
| DTU 1 - 1 | Machinery and agricultural equipment | 22,5 | 30 | 9 | 7,5 | 6 | 7,5 |  |  | 1 | 1 |  |
| University working methods | 22,5 | 30 |  | 15 | 7,5 | 7,5 |  |  | 1 | 1 |  |
| Transversal Teaching Units TTU |  |  |  |  |  |  |
| TTU 1 – 1 | Improving English language skills | 22,5 | 30 |  | 15 | 7,5 | 7,5 |  |  | 1 | 1 |  |
| Strengthening language skills for communication | 45 | 65 |  | 30 | 15 | 20 |  |  | 2,5 | 2,5 |  |
|  | 395,5 | 568 | 104,5 | 171 | 120 | 172,5 |  |  | 30 | 30 |  |
| Total Semester 1 |  |

**Semester 2 :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Teaching Unit | Topics | SWL | SWL | Weekly Workload | Coeff | Credits | Assessment method |
| Total face-to-face | Total students | L | T | PW | Personal Work | H. study supervision | Supervision hours / practical work groups | C: continuous R: written reportS: oral defence |
| Fundamental Teaching Units FTU |  |  |  |  |  |  |
| FTU 2 - 1 | Botany | 51 | 69 | 21 | 6 | 24 | 18 |  |  | 4 | 4 |  |
| Plant physiology | 50,5 | 70,5 | 20,5 | 15 | 15 | 20 |  |  | 4 | 4 |  |
| General agronomy | 33,5 | 41 | 12,5 | 9 | 12 | 7,5 |  |  | 2,5 | 2,5 |  |
| FTU 2 - 2 | Organic chemistry | 53 | 75 | 22 | 16 | 15 | 22 |  |  | 4 | 4 |  |
| Plant biochemistry | 30 | 39 | 15 | 6 | 9 | 9 |  |  | 2 | 2 |  |
| Methodological Teaching Units MTU |  |  |  |  |  |  |
| MTU 2 – 1 | PPPE 1: Knowledge of job positions | 22,5 | 37,5 |  | 15 | 7,5 | 15 | 2 |  | 2 | 2 |  |
| Tutored project | 22,5 | 45 |  |  | 22,5 | 22,5 |  |  | 2,5 | 2,5 |  |
| Internship Level 1 | 0 | 112 |  |  |  | 112 | 2 |  | 6 | 6 |  |
| Transversal Teaching Units TTU |  |  |  |  |  |  |
| TTU 2 – 1 | Professional English 1 | 22,5 | 30,5 |  | 15 | 7,5 | 8 |  |  | 1,5 | 1,5 |  |
| Introduction to communication | 22,5 | 30 |  | 15 | 7,5 | 7,5 |  |  | 1,5 | 1,5 |  |
| Total Semester 2 |  | 308 | 549,5 | 91 | 97 | 120 | 241,5 |  |  | 30 | 30 |  |

**Semester 3 :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Teaching Unit | Topics | SWL | SWL | Weekly Workload | Coef f | Credit s | Assessment method |
| Total face-to-face | Total students | L | T | PW | Personal Work | H. study supervision | Supervision hours / practical work groups | C: continuous R: written reportS: oral defence |
| Fundamental Teaching Units FTU |  |  |  |  |  |  |
| FTU 3-1 | Oil plants | 51 | 73,5 | 22,5 | 7,5 | 21 | 22,5 |  |  | 3,5 | 3,5 |  |
| Process engineering | 45 | 73 | 15 | 15 | 15 | 28 |  |  | 4 | 4 |  |
| Oil technology and industries | 112,5 | 152,5 | 45 | 22,5 | 45 | 40 |  |  | 8 | 8 |  |
| FTU 3-2 | Plant biotechnology | 35,5 | 50,5 | 11,5 | 12 | 12 | 15 |  |  | 2,5 | 2,5 |  |
| Plant genetics and improvement | 51 | 76 | 22,5 | 7,5 | 21 | 25 |  |  | 4 | 4 |  |
| Methodological Teaching Units MTU |  |  |  |  |  |  |
| MTU 3-1 | PPPE 2: Self-awareness | 9 | 24 |  |  | 9 | 15 | 3 |  | 1 | 1 |  |
| Tutored project 1 | 22,5 | 45 |  |  | 22,5 | 22,5 |  |  | 2,5 | 2,5 |  |
| Transversal Teaching Units TTU |  |  |  |  |  |  |
| TTU 3-1 | Professional English 2 | 22,5 | 30 |  | 15 | 7,5 | 7,5 |  |  | 1,5 | 1,5 |  |
| Oral communication | 22,5 | 30 |  | 15 | 7,5 | 7,5 |  |  | 1,5 | 1,5 |  |
| Introduction to business creation and management | 22,5 | 30,5 | 16,5 | 6 |  | 8 |  |  | 1,5 | 1,5 |  |
| Total Semester 3 |  | 394 | 585 | 133 | 100,5 | 160,5 | 191 |  |  | 30 | 30 |  |

**Semester 4 :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Teaching Unit | Topics | SWL | SWL | Weekly Workload | Coef f | Credit s | Assessment method |
| Total face-to-face | Total students | L | T | PW | Personal Work | H. study supervision | Supervision hours / practical work groups | C: continuous R: written reportS: oral defence |
| Fundamental Teaching Units FTU |  |  |  |  |  |  |
| FTU 4-1 | Applied microbiology | 36 | 54 | 18 |  | 18 | 18 |  |  | 3 | 3 |  |
| Quality control of oils 1 | 35,5 | 50,5 | 15 | 10,5 | 10 | 15 |  |  | 3 | 3 |  |
| FTU 4-2 | Nurseries and production techniques | 30 | 52 | 15 |  | 15 | 22 |  |  | 3 | 3 |  |
| Harvesting and conservation of PPAM | 18 | 38 |  | 10,5 | 7,5 | 20 |  |  | 2 | 2 |  |
| Methodological Teaching Units MTU |  |  |  |  |  |  |
| MTU 4-1 | PPPP 3: Decision (project) | 9 | 39 |  |  | 9 | 30 | 3 |  | 2 | 2 |  |
| Internship Level 2 | 0 | 224 |  |  |  | 224 | 3 |  | 12 | 12 |  |
| Transversal Teaching Units TTU |  |  |  |  |  |  |
| TTU 4-1 | Professional English 3 | 22,5 | 30 |  | 15 | 7,5 | 7,5 |  |  | 1,5 | 1,5 |  |
| Written communication | 22,5 | 30 |  | 15 | 7,5 | 7,5 |  |  | 1,5 | 1,5 |  |
| In-depth study of business management and start-ups | 22,5 | 32,5 | 12 | 10,5 |  | 10 |  |  | 2 | 2 |  |
| Total Semester 4 |  | 196 | 550 | 60 | 61,5 | 74,5 | 354 |  |  | 30 | 30 |  |

**Semester 5 :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Teaching Unit | Topics | SWL | SWL | Weekly Workload | Coef f | Credit s | Assessment method |
| Total face-to-face | Total students | L | T | PW | Personal Work | H. study supervision | Supervision hours / practical work groups | C: continuous R: written reportS: oral defence |
| Fundamental Teaching Units FTU |  |  |  |  |  |  |
| FTU 5-1 | Quality control of oils 2 | 83,5 | 108,5 | 22,5 | 41 | 20 | 25 |  |  | 5,5 | 5,5 |  |
| Plant protection | 58 | 83 | 30 |  | 28 | 25 |  |  | 4,5 | 4,5 |  |
| Organic farming | 43,5 | 68,5 | 22,5 |  | 21 | 25 |  |  | 3,5 | 3,5 |  |
| FTU 5-2 | Quality management | 50 | 70 | 18 | 15 | 17 | 20 |  |  | 3,5 | 3,5 |  |
| Statistics applied to experimentation | 36 | 56 | 9 | 18 | 9 | 20 |  |  | 3 | 3 |  |
| Legislation and bioethics | 33 | 63 | 18 | 15 |  | 30 |  |  | 3 | 3 |  |
| Methodological Teaching Units MTU |  |  |  |  |  |  |
| MTU 5- 1 | Tutored project 2 | 22,5 | 45 |  |  | 22,5 | 22,5 |  |  | 2,5 | 2,5 |  |
| Application to management and business creation | 22,5 | 32,5 | 3 | 19,5 |  | 10 |  |  | 1,5 | 1,5 |  |
| Transversal Teaching Units TTU |  |  |  |  |  |  |
| TTU 5-1 | Professional English 4 | 22,5 | 30 |  | 15 | 7,5 | 7,5 |  |  | 1,5 | 1,5 |  |
| Communication in a professional environment | 22,5 | 30 |  | 15 | 7,5 | 7,5 |  |  | 1,5 | 1,5 |  |
| Total Semester 5 |  | 394 | 586,5 | 123 | 138,5 | 132,5 | 192,5 |  |  | 30 | 30 |  |

**Semester 6 :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Teaching Unit | Topics | ! | SWL | Weekly Workload | Coeff | Credits | Assessment method |
| Total face-to-face | Total students | L | T | PW | Personal Work | H. study supervision | Supervision hours / practical work groups | C: continuous R: written reportS: oral defence |
| Fundamental Teaching Units FTU |  |  |  |  |  |  |
| FTU 6 - 1 |  | 0 | 0 |  |  |  |  |  |  | 0 | 0 |  |
|  | 0 | 0 |  |  |  |  |  |  | 0 | 0 |  |
| Methodological Teaching Units MTU |  |  |  |  |  |  |
| MTU 6 – 1 | Final year project | 0 | 200 |  |  |  | 200 |  | 16 | 9,5 | 9,5 |  |
| Internship Level 3 | 0 | 420 |  |  |  | 420 | 5 |  | 20,5 | 20,5 |  |
| Transversal Teaching Units TTU |  |  |  |  |  |  |
| TTU 6 – 1 |  | 0 | 0 |  |  |  |  |  |  | 0 | 0 |  |
|  | 0 | 0 |  |  |  |  |  |  | 0 | 0 |  |
| Total Semester 6 |  | 0 | 620 | 0 | 0 | 0 | 620 |  |  | 30 | 30 |  |