



Democratic and popular Algerian Republic
Ministry of Higher Education
And Scientific Research
Université Ferhat Abbas Sétif 1



Technical data sheet for
Specialty:
Immunology applied

Faculty: Science of Nature and Life
Department of: Biochemistry
Domain: Sciences of Nature and Life (SNV)
Field: Biological Sciences
Specialty: Immunology Applied.

❖ **Overview and objective of the Specialty :**

- Immunology is a field disciplinary in biology, involved in biomedical research pathophysiological many specialties. Master's degree in Immunology Applied " aims to provide students with a theoretical and practical training in depth on the fundamental bases of the immune response and its implementation in the fight against infectious agents and against cancers. The training offers an education in immunopathology (immunodeficiencies, autoimmunity, hypersensitivity reactions) and in immunotherapy of complex pathologies (autoimmune diseases, and cancers), with the important place given to the tools immunodiagnostic and immunotherapy.
- The first year consolidates and deepens the fundamental bases of the cellular and molecular biology and immunology; the second year tends towards a specialization to address the understanding of dysfunctional molecular and cellular related to autoimmune diseases and human cancers, as well as therapeutic applications arising from it. The lessons take place in the form of courses, TD, TP, conferences and seminars, with debates organized around themes of research in immunology, immunopathology, immunotherapy, and immunodiagnostic
- At the end of the training, the graduates will have mastered the basic techniques in molecular biology and immunology, know how to conduct an experimental process, manage resources, bibliographic, critical analysis of the scientific results, and are prepared to a The program is open to students who hold licenses following academic: degree in Biochemistry insertion in the fields of research or to pursue a PhD.

❖ **Access Conditions :**

The access conditions are generally a degree at the bachelor level or equivalent in biology, biochemistry, life sciences, pharmacy or a stream close. In an example, offers the master of arts in immunology, the access is explicitly open to holders of a degree in biochemistry or immunology, and other formations also indicate access to students from courses in biology and health

❖ Progression and Assessment

- The training is organized in 4 semesters for a total of 120 credits (30 credits per semester), divided into Teaching Units Core (UEF), Methodological (EMU), Discovery (UDS) and Transverse (UUT). The teachings of the six semesters 1 to 3 take place in the form of lectures, tutorials (TD) and practical work (PW). The half of 4 is entirely devoted to a stage of research (bibliographic, experimental) sanctioned by the writing of a dissertation and an oral defense before a jury.
- The evaluation of each material combines, depending on the case, a mid-year review is written in face-to-face and ongoing monitoring (questions written, accounts of TP, presentations, personal work), with the weights being brought to the knowledge of the students at the beginning of the semester. The EU is acquired and capitalized definitively when the general average (weighted by the coefficients of the materials) is greater than or equal to 10/20, with the possibility of compensation between subjects of the same EU and between the EU and in the same semester, in accordance with the regulations of studies of type LMD.

❖ Opportunities for employment after graduation :

The course Immunology and Immunotechnologie open mainly to applied and fundamental research (public or private) in the areas of scientific, medical, pharmaceutical and veterinary : university research laboratories and university hospital, laboratories, medical analysis (CHU, health centres), units of pharmaceutical production (kits immunological, immunotherapies such as cytokines and monoclonal antibodies), biotechnology companies and food industry, as well as the preparation of a doctoral thesis.

Among the socio-economic partners associated with the training: the CHU Saâdna Abdenour of Sétif, the unit pharmaceutical PHARMA INVEST (El-Eulma), the unit pharmaceutical SALEM (El-Eulma), AGRODIV (Sétif), and the Dairy to TELL (Mezloug, Sétif).

❖ Follow-up study after graduation :

Graduates of the Master in Immunology Applied " can continue their studies with a phd, especially in the Laboratory of Applied Biochemistry (accreditation n°88 of the 25/07/2000, University Ferhat Abbas Sétif 1) and partner laboratories. The monitoring of the insertion in the professional and academic graduates is ensured by the pedagogical team of the specialty, in connection with the department of Biochemistry and structures of assistance to the professional integration of the university (office of follow-up courses and careers).

❖ Organization of studies and official duration of the programme :

➤ **Semester 01 :**

Teaching unit	Modules	Credits	Coefficient	Volume weekly schedule			hourly Volume semester (15 weeks)	evaluation Mode		
				TP	TD	COURS		Review	Continuous Control	Other
EU Fundamental	Immunology Advanced	6	3	-	1h30	3h	67h30	100%	-	-
	Immunity: Genes and Molecular Mediators	6	3	-	1h30	3h	67h30	100%	-	-
	Cellular Communication and Signaling	6	3	-	1h30	3h	67h30	100%	-	-
EU Methodology	Physicochemistry of Biological Macromolecules	5	3	2: 30h	-	1h30	60h	100%	-	-
	Recombinant Protein Production	4	2	-	1h30	1h30	45h	60%	40%	-
EU-Discovery	Bioethics in Biomedical Research	1	1	0: 30h	-	1h	22: 30	100%	-	-
	Free and Open-Source Software	1	1	1h	-	0: 30h	22: 30	60%	40%	-
EU Transverse	Communication	1	1	-	-	1h30	22: 30	100%	-	-
	TOTAL SEMESTER	30	17	4h	6h	15h	375h			

➤ Semester 02:

Teaching unit	Modules	Credits	Coefficient	Volume weekly schedule			hourly Volume semester (15 weeks)	evaluation Mode		
				TP	TD	COURS		Review	Continuous Control	Other
EU Fundamental	Immunological Techniques	6	3	-	1h30	3h	67h30	60%	40%	-
	Genomic and Proteomic Analyses	6	3	-	1h30	3h	67h30	100%	-	-
	Biotechnological and Immunological Tools	6	3	1h30	-	3h	67h30	60%	40%	-
EU Methodology	Fundamentals and Experimental Approaches in Immunology	5	3	2h:30	-	1h30	60h	60%	40%	-
	Biostatistics	4	2	1h:30	-	1.30	45h	60%	40%	-
EU Discovery	Molecular Biology and Immunology Lab Workshop	1	1	0:30h	-	1h	22h:30	60%	40%	-
	Computer Programming Applied to Science and Technology	1	1	1h	-	0: 30h	22h:30	60%	40%	-
EU Transverse	Legislation, ethics and professional conduct	1	1	-	-	1h30	22h:30	100%	-	-
	TOTAL SEMESTER	30	17	7h	3h	15h	375h			

➤ Semester 03:

Teaching Unit	Modules	Credits	Coefficient	hourly weekly			Volume of hours per semester (15 weeks)	Evaluation Mode		
				Cours	TD	TP		Review	Continuous Control	Other
EU Fundamental	Immunophysiopathology	6	3	3h	1h30	-	67h30	100%	-	-
	Host-Pathogen Interactions	6	3	3h	1h30	-	67h30	60%	40%	-
	Immunotherapy	6	3	3h	1h30	-	67h30	60%	40%	-
EU Methodology	Mechanisms of oncogenesis	5	3	1h30	2h30	-	60h	60%	40%	-
	Cell and Gene Therapy	4	2	1h30	1h30	-	45h	60%	40%	-
EU-Discovery	Literature Review and Research Analysis Methods	1	1	0:30h	-	1h	22h30	60%	40%	-
	Artificial Intelligence Applied to Science and Technology	1	1	1h	-	0:30h	22h30	60%	40%	-
EU Transverse	Start-up Creation and Development	1	1	1h30	-	-	22h30	100%	-	-
TOTAL SEMESTER		30	17	15	8h30	1h30	375h			

➤ Semester 04:

The fourth semester is dedicated to an internship bibliographic and experimental five months (February-June), giving rise to the drafting of a report and give an oral presentation in front of a jury. The research themes are discussed within the teaching team, taking into account the available resources (government laboratories, private laboratories, research laboratories, CRBT, CRAPC).

Activity	time Volume	Coefficient / Credits
personal Work	200h	Coeff. 4 / 8 credits
Internship	175h	Coeff. 4 / 7 credits
Master's Thesis	375h	Coeff. 9 / 15 credits
TOTAL	750hrs	Coeff. 17 / 30 credits

Summary : Semester 1 = 30 credits · Semester 2 = 30 credits · Semester 3 = 30 credits · Semester 4 = 30 credits → Total training = 120 credits over 4 semesters (2 years).