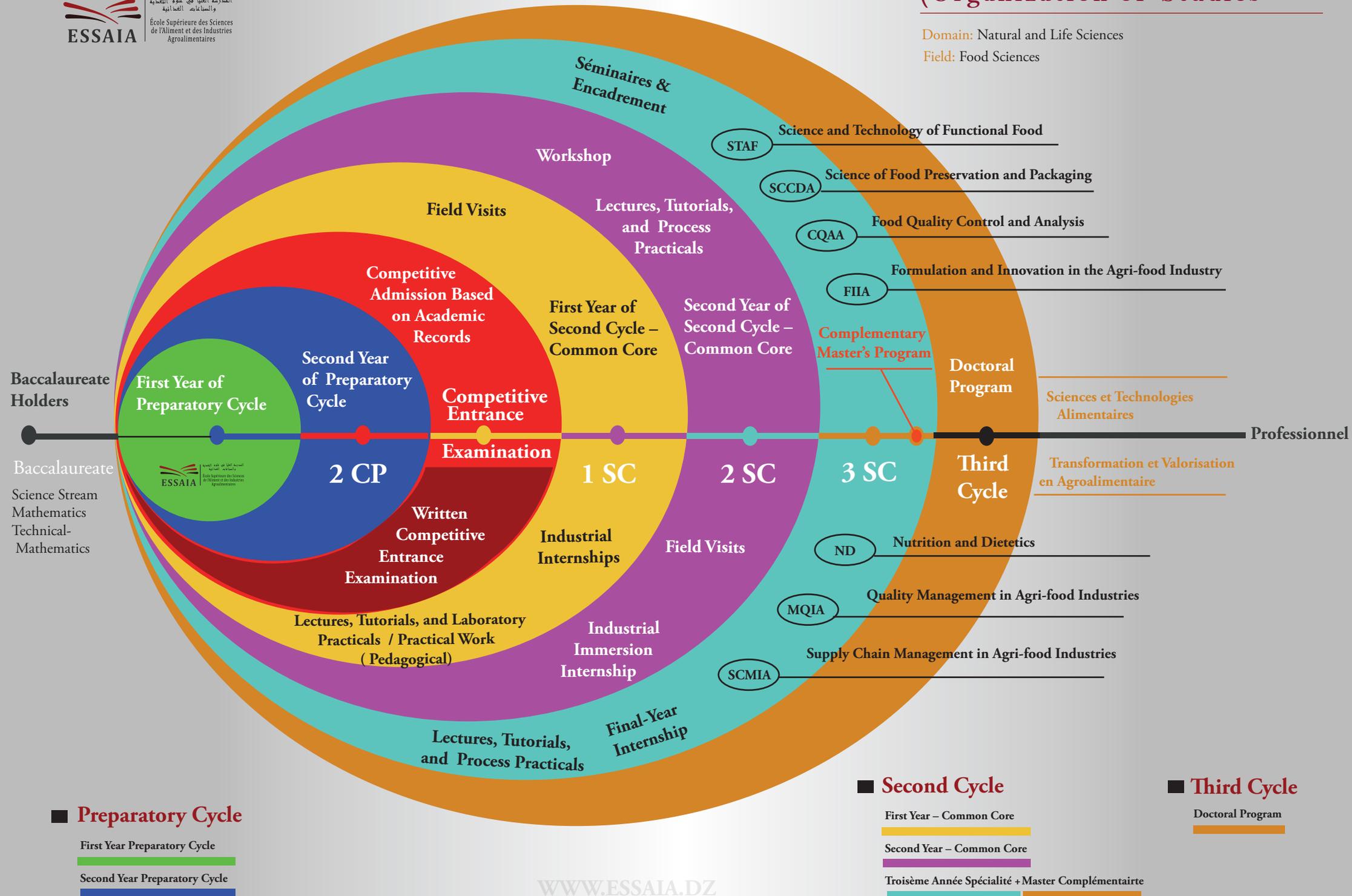


Domain: Natural and Life Sciences

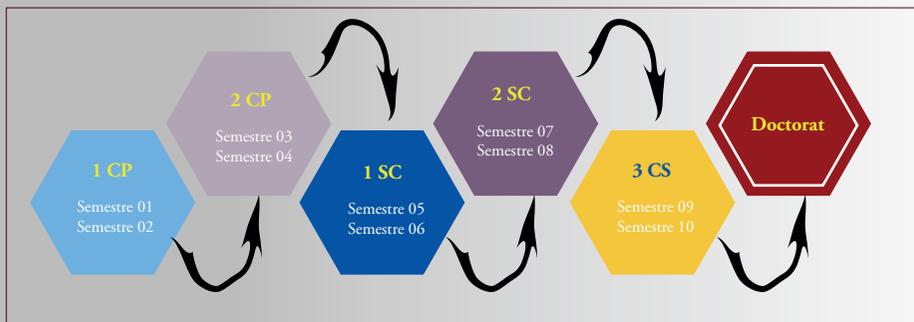
Field: Food Sciences



Academic Program Structure (Organization of Studies)

Cycle 1 : Preparatory Cycle (2 years)

- ✓ Objective : To acquire a solid scientific foundation and develop a rigorous work methodology in preparation for entry into the specialization cycle
- ✓ Duration : 2 academic years (4 semesters).
- ✓ Admission : High school graduates from the Experimental Sciences, Mathematics, and Technical Mathematics streams with an average equal to or above the minimum set by the Ministry of Higher Education and Scientific Research (MESRS).
- ✓ Content : Fundamental courses in mathematics, physics, chemistry, biology, computer science, and languages, among others.
- ✓ Assessment : Continuous assessment and semester examinations.
- ✓ Further Studies : Entrance examination for the ESSAIA specialization program or other higher education institutions, or transfer to universities in the field of natural and life sciences.



Cycle 2 : Specialization Cycle (3 years)

- ✓ Objective : To train highly qualified engineers specializing in food science and the agri-food industries.
- ✓ Duration : 3 academic years (6 semesters).

Admission : Based on Academic Records for students who have successfully completed ESSAIA's preparatory cycle (80% of available seats in the second cycle), or through a written entrance examination for ESSAIA students who did not pass the academic-record-based selection, as well as for external candidates from other recognized equivalent programs (20% of available seats in the second cycle).

- ✓ Specializations:
 - Science and Technology of Functional Foods
 - Food Preservation and Packaging Science
 - Food Quality Control and Analysis
 - Formulation and Innovation in the Agri-food Industry
 - Nutrition and Dietetics
 - Quality Management in Agri-food Industries
 - Supply Chain Management in Agri-food Industries
- ✓ Content : In-depth theoretical and practical training covering the various sectors of the agri-food industry over two years, followed by the chosen specialization at the end of the cycle, along with the complementary Master's program/degree.
- ✓ Assessment : Continuous assessment, semester examinations, evaluation of Immersion Internships and Final Dissertations through two Defenses: One for the **Engineering** Degree and the Other for the **Master's** Final Project
- ✓ career prospects : Various sectors of the agri-food industries (production, quality, R&D, marketing, etc.), regulatory and inspection bodies, consulting firms, and teaching and research institutions.

Immersion Internship

The **immersion internship** generally involves collaborating with an agri-food company, where students have the opportunity to observe and engage in the various stages of food production, processing, distribution, and marketing.

The goal of this internship is to provide students with an in-depth understanding of the challenges and issues specific to the agri-food industry while helping them develop essential practical skills.

It also allows for the concrete application of the theoretical knowledge acquired during their academic training. Supervised by professionals in the field, students may also be assigned specific projects during their immersion experience.

This internship plays a crucial role in strengthening ties between academia and industry while helping students gain a clearer vision of their professional future.



Complementary Master's Degree

The Complementary Master's program includes a structured course load with theoretical classes that allow students to deepen their expertise while engaging with contemporary challenges in their field of study.

The degree is awarded once the research project is successfully defended before a jury of experts in the agri-food domain. This qualification is particularly valued in sectors where advanced specialization and expertise are required.



Cycle 3 : Cycle Doctoral

Objectives of the Doctoral Program in Food Sciences at ESSAIA

La formation de 3^{ème} cycle en Sciences Alimentaires à l'ESSAIA répond aux défis croissants de sécurité alimentaire, d'innovation technologique et de durabilité. Elle vise à doter les doctorants de compétences scientifiques avancées, leur permettant de devenir des acteurs clés dans la transformation du secteur agroalimentaire, tout en favorisant l'émergence de solutions intelligentes et durables, y compris par l'intégration des technologies de l'intelligence artificielle, de l'outil numériques avancés, et le développement de startups innovantes.

Reposant sur une approche multidisciplinaire, cette formation mobilise les savoirs en sciences fondamentales, en ingénierie alimentaire, en biotechnologie, en data science et en management de l'innovation, pour répondre aux besoins de la chaîne de valeur agroalimentaire.



As part of its third-cycle (Doctoral) Program in Food Sciences, ESSAIA offers two distinguished specializations :

1. Food Science and Technology



This specialization trains future researchers to become experts in the design, optimization, and control of food processing and preservation methods. It places central emphasis on sanitary and nutritional quality, traceability, and the integration of emerging technologies to meet the most demanding standards of the agri-food industry.

2. Agri-Food Processing and Valorization



Orientée vers une valorisation intelligente et durable des matières premières agricoles et leurs sous-produits, cette spécialité développe des compétences en en biotransformation, en agro-innovation territoriale, et en économie circulaire. Elle prépare les futurs chercheurs experts dans la conception des systèmes agroalimentaires innovants, intégrés à leur environnement économique et social, en collaboration avec les parties prenantes locales et industrielles.

ESSAIA, Central Regional Focal Point for Food Sciences

ESSAIA is recognized as the focal point for Food Sciences within the Central Regional Doctoral School. In this capacity, it leads collaborative activities with [the universities of Bouira, Tizi Ouzou, and USTHB](#). This dynamic academic network strengthens synergies in research, innovation, and doctoral supervision, consolidating ESSAIA's role as a regional and national center of excellence in agri-food sciences.