
CENTER OF AGRICULTURAL SCIENCES

ENGINEERING IN AGRONOMY

OBJETIVE:

Train professionals of agronomy of quality and with an integral vision, able to apply, innovate and transmit pertinent and socially relevant knowledge, with components of humanistic character and care of the environment, that allow them to confront, adapt and solve problems of the diverse situations and changes in the agricultural context, responding to production needs, resource management and agricultural research.

PROFILE OF THE ASPIRANT:

Based on the institutional norms, the aspirant for undergraduate studies must apply the corresponding entrance exam.

Based on the Institution's Ideology and its normativity, as well as on the considerations made by the Curriculum Redesign Committee, the applicant for admission to the Agricultural Engineer Education Program should have the following characteristics:

- Interest in agricultural and biological sciences
- Academic ability that allows him to carry out undergraduate studies

PROFILE OF THE GRADUATE:

KNOWLEDGE:

- Fundamental natural sciences and exact basic that allow you to interpret natural phenomena that affect agricultural production, as well as to understand the engineering area inherent to the profession.
- Principles of engineering in the use and efficient management of agricultural machinery and equipment, as well as design aspects of rural buildings and production facilities, storage and efficient product conservation.
- Technologies for catchment, management, distribution and application of irrigation water.
- Physical, chemical and biological properties of the soil as well as the fertility, conservation and management of the soil.
- Water-soil-plant-atmosphere interrelations and the proper management of them in sustainable production.
- Biochemical and physiological processes of nutrition, growth, development, yield, harvesting and postharvest crops.
- Basics of genetics and biotechnology in crop improvement.
- Processes of certification in health and food safety.
- Solids on projects of investment, economy, accounting and agricultural administration, marketing and organization of producers in the management of resources.
- Agricultural production technologies and their sustainable management.
- Research methodology, experimentation techniques and foundations of the scientific divulgation for the elaboration of projects of production, transfer and validation of technology.
- English language at basic level.

ABILITIES:

- Apply the basic principles within the areas of knowledge of exact and applied sciences, and natural sciences and knowledge of the physical environment where the development of agricultural engineering takes place in agricultural production.
- Optimize the biochemical and physiological processes of crops with the application of technologies appropriate to the characteristics of each agricultural enterprise to develop efficient and sustainable agricultural production systems.
- Establish and implement viable and efficient programs for the management, conservation and recovery of natural resources in agricultural production processes.
- Plan, adapt, establish and manage systems of intensive production for optimum use of water, through the use of technologies such as agro-plastic, fertirrigation, information and communication systems.
- Establish procedures, times, movements and ways of storing the crop, according to the type of product to respond adequately to market requirements and various official national or international standards.
- Rational management of plant genetic resources to improve agricultural production in areas of high genetic and cultural diversity.

- Efficient use of both conventional and alternative energy resources as well as recycling and biodegradable inputs for sustainable management of agricultural systems.
- Implement and follow up on food safety programs with a focus on good agricultural practices in accordance with current national and international regulations, considering the company's conditions to produce foods that do not harm the health of consumers.
- Design and implement adequate strategies of integrated phytosanitary management in agricultural systems to improve the production and quality of crops with minimum environmental impact.
- Determine the needs and characteristics of infrastructure, facilities, machinery, equipment, accessories and irrigation systems relevant to production on farms and the sustainable management of water resources in agriculture.
- Develop and provide technical and administrative advice on efficient organizational structures and viable agricultural investment projects, relevant to the establishment and improvement of small and medium-sized enterprises, as well as efficiently manage financial support programs to promote agricultural development.
- Design, operate and disseminate the results of agricultural research protocols according to a specific reference framework and scientific methodology, with the purpose of contributing to the solution of problems and the development, rescue and innovation of sustainable technologies.
- To handle documents of scientific character written in English language with the purpose of having access to current knowledge of the agronomy.

ATTITUDES:

- Responsibility to assume their personal and professional acts.
- Entrepreneur to be able to generate their own jobs.
- Service and commitment with regard to their participation in community life.
- Responsibility with society to support productivity and food supply.
- Patience and ability to respond to adversities caused by natural phenomena.
- Constancy and discipline for permanent personal improvement and for the achievement of production objectives and goals.

VALUES:

- With a clear awareness of social and human development, respect for the environment and cultural diversity (Unity, Respect, Identity, Equity and Pluralism).
- Work in groups sharing objectives, tasks and providing the best of themselves (Solidarity, Loyalty, Communicability and Subsidiarity).
- It must have a broad vision of the world within which its studies (Identity) make sense.

WORK FIELD:

Private sector: In self-employed companies; in the free exercise of the profession as a consultant, in quality management and food safety, in the elaboration of investment projects; as an employee in management, technical management and collaboration in companies dedicated to plant production (vegetables, fruits, among others); in companies producing and marketing seeds; in companies dedicated to the production of seedlings, gardening and nurseries; in supply or agricultural services enterprises.

Public sector: Institutes of agricultural research, education, and in federal, state and municipal public administration agencies related to the agricultural sector.

DURATION:

Eight semesters.

Syllabus

DESIGN 61 CAREER 41

First Semester	T	P	C	CENTER	SECTION
CHEMISTRY	4	2	10	BASIC S.	CHEMISTRY
MATH	3	2	8	BASIC S.	MATHS AND P.
PHYSICS	3	2	8	BASIC S.	MATHS AND P.
BOTÁNY	3	2	8	BASIC S.	BIOLOGY
EDAPHOLOGY	3	2	8	AGRIC. S.	DISC.AGRÍCOLAS
INTRODUCTION TO AGRONOMY	3	2	8	AGRIC. S.	DISC. AGRÍCOLAS

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Second semester

BIOCHEMISTRY	3	2	8	BASIC S.	CHEMISTRY
TOPOGRAPHY	3	2	8	DESIGN AND C.	GEOT. & HYDRA.
HYDRAULICS	3	2	8	DESIGN AND C.	GEOT. & HYDRA.
FARM EQUIPMENT	3	2	8	AGRIC. S.	DISC. AGRÍCOLAS
SOIL FERTILITY	3	2	8	AGRIC. S.	DISC. AGRÍCOLAS
PRODUCTION OF BASIC CROPS AND FODDER	3	2	8	AGRIC. S.	FITOTECNIA

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Third semester

RURAL CONSTRUCTIONS	3	2	8	DESIGN AND C.	CONTRUCTION
BIO-STATISTICS I (EST-B11)	2	3	7	BASIC S.	STATISTICS
IRRIGATION SYSTEMS	3	2	8	AGRIC. S.	AGRICULTURAL D.
AGRICULTURAL CLIMATOLOGY & METEOROLOGY	3	2	8	AGRIC. S.	AGRICULTURAL D.
APPLIED VEGETAL PHYSIOLOGY	3	2	8	AGRIC. S.	FITOTECNIA
AGRICULTURAL ENTOMOLOGY	3	2	8	AGRIC. S.	FITOTECNIA

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Fourth semester

SUSTAINABLE MANAGEMENT OF AGRICULTURAL SYSTEMS	3	2	8	AGRIC. S.	AGRICULTURAL D.
GENERAL FRUIT CULTIVATION	3	2	8	AGRIC. S.	FITOTECNIA
PHYTOPATOLOGY	3	2	8	AGRIC. S.	FITOTECNIA
VEGETABLE NUTRITION	3	2	8	AGRIC. S.	FITOTECNIA
GENERAL HORTICULTURE	3	2	8	AGRIC. S.	FITOTECNIA
OPTIONAL PROFESSIONAL I					

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Fifth semester

GENERAL ECONOMY	3	2	8	ECON. & ADMIN. S. AGRIC. S.	ECONOMIA DISC. AGRÍCOLAS
RESEARCH METHODOLOGY	3	2	8		
INTEGRAL PEST MANAGEMENT	3	2	8	AGRIC. S.	FITOTECNIA
GENETICS AND PLANT IMPROVEMENT	3	2	8	AGRIC. S.	FITOTECNIA
MANAGEMENT AND ORGANIZATION OF AGRICULTURAL PRODUCTION	3	2	8	AGRIC. S.	DISC. AGRÍCOLAS
OPTIONAL PROFESSIONAL II					

Sixth semester

ADMINISTRATION	3	2	8	ECON. & ADMIN. S..	ADMINISTRACIÓN
PRODUCTION COSTS	3	2	8	ECON. & ADMIN. S.	CONTADURÍA
AGRICULTURAL EXPERIMENTATION				AGRIC. S.	DISC. AGRÍCOLAS
FOOD SAFETY IN PROD. AGRICULTURAL	3	2	8		
OPTIONAL PROFESSIONAL III	3	2	8	AGRIC. S.	FITOTECNIA
OPTIONAL PROFESSIONAL IV					

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Seventh semester

	T	P	C	CENTER	SECTION
AGRICULTURAL INVESTMENT PROJECTS	3	2	8	ECON. & ADMIN. S.	FINANCE
PROFESSIONAL ETHICS				SOCIAL SCIENCES AND HUMANITIES.	
RESEARCH SEMINAR	2	2	6		PHYLOSOPHY
PHYSIOLOGY POSCOSECHA DE PROD. AGRICULTURAL	3	2	8	AGRIC. S.	FITOTECNIA
OPTIONAL PROFESSIONAL V	3	2	8	AGRIC. S.	FITOTECNIA
PROFESSIONAL OPTIONAL VI					

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Eighth semester

PROFESSIONAL PRACTICES	5	38	48	AGRIC. S.	FITOTECNIA
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Social Service Institutional Program

INSTITUTIONAL PROGRAMS

- Institutional Program of Professional Practices
- Institutional Program of Social Service
- Institutional Tutoring Program
- Mobility and Academic Exchange
- Institutional Program of Foreign Languages
- Institutional Program of Humanist Formation

DEGREE REQUIREMENTS

The graduate must adhere to the provisions of chapter XIV of the degree in technical, technical and higher education, article 156 of the General Teaching Regulations (NI-20300-19), which states the following:

"Once all the subjects and requirements indicated in the curriculum of technical, technical and baccalaureate degrees have been accredited, the graduate may request the issuance of his degree in the Department of School Control, after complying with the following elements :

I.- To have fulfilled the requirements of Social Service, Humanistic Training Professional Practices and Foreign Languages, defined in the institutional programs;

II.- Check that there is no debit with the Autonomous University of Aguascalientes;

III.- Have covered the quota established in the plan of taxation to obtain the title; and

IV.- Have submitted the exit exam "1.
