GENERAL INFORMATION

The industry has been around since its birth in the 18th century; It has evolved in parallel with the knowledge of human beings and has always offered us more effective production levels and models. The key to today's production system, where the Industry 4.0 process is experienced, is information technologies that enable machines to communicate with each other throughout the entire production process. It can be said that the agricultural sector, due to its structure, has been slow to catch up with the digital transformation that has marked our age compared to other sectors. Considering that the agricultural sector has a very important responsibility to feed the ever-increasing world population by prioritizing factors such as efficiency and sustainability, it is an undeniable fact that we have to change this trend. According to the report of the World Government Summit; With increasing demand, we have to produce 70 percent more food in 2050 than we do now. For this reason, the whole world needs to draw a road map by taking into account demographic change, proper use of natural resources, climate changes and food waste problems.

With this transformation called Digital Agriculture, the need to define a new ecosystem in the agricultural sector has emerged, and in this context, smart systems such as computer-aided control systems, various software and hardware tools, agricultural machines and fields equipped with digital sensors and their communication with each other, and image processing technologies have emerged. Its establishment and dissemination have gained importance. With these systems, all factors important for the sustainability of agricultural production are presented to the producers quickly and simultaneously, ensuring efficient use of resources.

Agriculture is of critical importance in the development and survival of countries. A country today; It has a say in the world to the extent of the information it produces, the technology it develops and the innovations it finds. Countries that can manage R&D and innovation activities well gain global competitiveness. Digital Agriculture is among the most important strategic technology areas for countries to gain this competence. Many countries produce the food they need; It determines various policies and strategies to produce/use safe, economical, efficient and environmentally friendly technologies. In order for our country, which has a very advantageous position in terms of agricultural resources, to gain competence in agriculture, which is one of its most important fields, it is necessary to develop technologies that can be used in the food markets of the future and increase the competitiveness of our country in this field, as well as technologies that use our own resources to the maximum. In addition, our country's geostrategic and geopolitical position necessitates it to produce local, national, reliable, environmentally friendly and economical technologies in the field of agriculture and to develop agricultural technologies that can compete in international agricultural markets.

The integration of Turkey, an agricultural country, into Digital Agriculture practices and this process in order to increase its production potential, effectiveness and efficiency is very important for the future of the Turkish Agriculture sector and for the sector to gain international competitiveness. From this point of view, it is thought that the opening of the program will have widespread effects, first on a regional, then national and international scale.

Since the number of companies operating in the field of digital agriculture and the need for qualified personnel are increasing day by day in our country, this discipline needs to be disseminated in universities and its education should be improved in order to keep up with the rapidly developing and rising technological developments. In addition, training scientists at

national and international levels in this field is among the priority areas of our country and our university. Graduates of this program will be able to work as technical personnel or R&D personnel in private or public digital agricultural companies and industrial organizations that develop innovative and high value-added products.

The acceleration of R&D and innovation activities in the field of Digital Agriculture is of strategic importance for increasing our country's international competitiveness and food security. Digital Agriculture; education in physical sciences and engineering to understand, model, process or improve biological systems for sustainable developments in agriculture, water-land use and the environment; It will be a branch of science that deals with research. Its aim is to maximize the agricultural potential of the region, support it with new technologies, and raise educated, modern and well-equipped individuals.

Students enrolled in the program will be provided with specific information about smart agricultural practices, mechanization in agriculture and automated agricultural structures, as well as the design of irrigation systems, agricultural structure dynamics, climate-plant modeling, agricultural energy systems and sustainable management principles and practices (integrated product management, automation in agriculture, etc.).); effective use of natural resources; establishment and management of agricultural lands; cultivation of field, vegetable, ornamental and medicinal-aromatic plants; meadow and pasture management; Research, training and publication studies on system and machine selection and use, the quality of herbal agriculture-food products (standards and quality systems), planning of the entire process from production to consumption, and the application of modern technologies will be given in a multidisciplinary manner with a holistic approach. Students will also be provided with basic information on Digital Agriculture, data collection and analysis methods, etc.; graduation theses will be prepared; Internships and professional practices will be provided.

The advantages of the program are the agricultural potential of our country and especially the Niğde region located in the Central Anatolia Region. Agriculture sector is the main sector in Niğde; Its economic importance is increasing. Field agriculture, fruit growing and vegetable growing create vitality in Niğde, which provides 75.2% of the total agricultural income from crop production. Our province of Niğde, which ranks first in the production of horticultural crops (apple, grapes, cabbage, tomato), constitutes 25% of Turkey's total potato production. Wheat, barley, rye, dry beans, chickpeas, alfalfa, sainfoin, sugar beet and silage corn are among the other important plant products of the province. Students who will study in the Department of Digital Agriculture will graduate by finding application opportunities in these agricultural fields.

The purpose of opening the program is stated below.

1. To provide graduate students in the field of Digital Agriculture with the ability and scientific competence to conduct independent research, analyze and comment on scientific events from a broad perspective, and determine the necessary steps to reach new syntheses.

2. To enable successful students who aim to continue their academic careers with a master's degree, to fulfill their wishes in line with the program.

3. With this program, graduate students:

a. Ability to develop and solve problems in the field using scientific research methods, evaluate and synthesize the results,

b. Ability to design and carry out experiments and analyze and interpret the results,

c. Ability to use information, communication technologies and modern measurement tools required for research in the field and competence in new and clean energy,

d. Ability to communicate within and across disciplines, work with multidisciplinary teams, and solve unique and interdisciplinary problems,

e. To be able to convey current developments in the field, their own studies and results in written, oral and visual form at national and international levels,

f. It aims to raise awareness of the need for lifelong education and the ability to follow new and developing practices in the field.

4. Digital Agriculture Master's Program; It is aimed to create a contemporary and effective lesson plan, under the leadership of developments in the world and in Turkey, covering the fields of agriculture, software, agricultural mechanization, irrigation science and engineering. In order to follow the scientific and technological developments in the world in all fields and to reach international standards, interdisciplinary cooperation on agricultural technologies needs to be strengthened in our country. In this context, based on the fact that agricultural technologies will create a synergy in scientific, industrial and economic fields, from the service sector to defense and other branches of industry, it aims to establish a close cooperation between universities, industry and public institutions in order to use this synergy in the most efficient way. Within the framework of this cooperation, new interdisciplinary studies on the product are aimed with universities, their research centers and laboratories, other research centers and companies.

5. Students graduating from this program will be particularly familiar with digital applications in agricultural production, predictions, applications of engineering subjects in the agricultural field, etc. They will be very competent on the subject.

6. Students graduating from this program will significantly contribute to the qualified manpower trained in Digital Agriculture. They will be able to find employment opportunities both in universities and in strategically important institutions and organizations operating in the field of product development and active applications in the field of agriculture, as well as in the private sector.