# PROGRAM INFORMATION

## Program Name and Degree Awarded

Programme Name: Horticultural Production and Marketing
Degree Awarded: Doctor of Physiology in Horticultural Production and Marketing

## Duration of Studies

Normal duration is 8 semesters
Extra 4 semesters can be given to students to finalize their thesis.

## Total Credits / ECTS

21 credits / Qualification Exam / 240 ECTS

## Language of Instruction

The language of programme is English.

## Mission and Vision

### Mission

The mission of the Doctorate Program in Horticultural Production and Marketing is to train highly qualified researchers, academicians, and professionals who are capable of generating original scientific knowledge and innovative solutions to complex problems in horticultural science. The program aims to advance expertise in sustainable production systems, greenhouse technologies, crop protection, postharvest management, and agribusiness strategies. Through advanced coursework, independent research, and scholarly dissemination, the program prepares graduates to contribute to the global body of knowledge, lead multidisciplinary research projects, and influence policies and practices that shape the future of horticultural production and marketing.

### Vision

The vision of the Doctorate Program in Horticultural Production and Marketing is to become a recognized center of excellence in horticultural research and education at the local and international level. The program aims to produce visionary scientists and leaders who will address critical challenges in food security, climate change, biodiversity conservation, and sustainable agricultural development.

## Program Objectives

The Doctorate Program in Horticultural Production and Marketing aims to equip students with institutional, practical, and academic knowledge and skills in general plant production in the field of agriculture and specifically in the production of horticultural plants and the marketing of these products. The program includes topics such as plant production techniques, product preservation, plant breeding and genetics, seed production, seedling production and plant physiology. The

program also covers areas such as traceability and sustainability in agricultural production and certified production. The doctorate program consists of seven courses, a doctorate qualifying exam after completing the courses, a seminar, and a thesis.

**Program Learning Outcomes**

Graduates of the Doctorate Program in Horticultural Production and Marketing will be able to:

- Demonstrate comprehensive and systematic knowledge in agricultural sciences, with advanced expertise in horticultural plant production, postharvest management, and marketing strategies.
- Develop original research that contributes to scientific advancement in areas such as plant physiology, plant breeding and genetics, biotechnology, seed and seedling production.
- Apply innovative techniques and critical approaches in the design, implementation, and evaluation of sustainable horticultural production systems, with emphasis on traceability, certification, and environmental responsibility.
- Analyze and solve complex and novel problems in horticultural production and marketing by integrating interdisciplinary knowledge, scientific methods, and advanced analytical tools.
- Produce and disseminate new scientific knowledge through peer-reviewed publications, conference presentations, and other academic platforms at both national and international levels.
- Lead and manage multidisciplinary research projects, demonstrating advanced skills in project planning, funding acquisition, data analysis, and team coordination.
- Demonstrate responsibility and ethical awareness in scientific research, professional practice, and decision-making processes.
- Engage in continuous learning and academic leadership, mentoring future researchers and professionals while advancing the frontiers of knowledge in horticultural production and marketing.

## Curriculum

| 1st SEMESTER (FALL) | | | | | 2ND SEMESTER (SPRING) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Course Code** | **Course Name** | **T** | **P** | **C** | **Course Code** | **Course Name** | **T** | **P** | **C** |
| AGRH613 | Agriculture and Environment | 3 | 0 | 3 | AGRH606 | Advanced Greenhouse Techniques and Technologies | 3 | 0 | 3 |
| ES638 | Water Reuse Technologies | 3 | 0 | 3 | AGRH620 | Vegetable and Fruit Pests | 3 | 0 | 3 |
| AGRH607 | Seed Control and Certification | 3 | 0 | 3 | AGRH621 | Soil-Plant Relationship | 3 | 0 | 3 |
| AGRH609 | Citrus Breeding | 3 | 0 | 3 | AGRH690 | Seminar | 0 | 2 | 0 |
| **3rd SEMESTER (FALL)** | | | | | **4th SEMESTER (SPRING)** | | | | |
| **Course Code** | **Course Name** | **T** | **P** | **C** | **Course Code** | **Course Name** | **T** | **P** | **C** |
| AGRH650 | Qualification Exam | 0 | 2 | 0 | AGRH600 | Thesis | 0 | 2 | 0 |
| **5th SEMESTER (FALL)** | | | | | **6th SEMESTER (SPRING)** | | | | |
| **Course Code** | **Course Name** | **T** | **P** | **C** | **Course Code** | **Course Name** | **T** | **P** | **C** |
| AGRH600 | Thesis | 0 | 2 | 0 | AGRH600 | Thesis | 0 | 2 | 0 |
| **7th SEMESTER (FALL)** | | | | | **8th SEMESTER (SPRING)** | | | | |
| **Course Code** | **Course Name** | **T** | **P** | **C** | **Course Code** | **Course Name** | **T** | **P** | **C** |
| AGRH600 | Thesis | 0 | 2 | 0 | AGRH600 | Thesis | 0 | 2 | 0 |

## Laboratory and Equipment Capacity (if applicable)

**Table 1.** Laboratory and computer sources

| Laboratory Name | Number of students | Area ($m^2$) |
|---|---|---|
| **Chemistry Laboratory** | 30 | 100 |
| **Physics Laboratory** | 30 | 75 |
| **Horticulture Laboratory** | 20 | 100 |

## Career Opportunities

Graduates of the Doctorate Program in Horticultural Production and Marketing are equipped with advanced academic, institutional, and professional qualifications that enable them to pursue high-level careers in academia, research, industry, and public administration. Typical career opportunities include:

- **Academic Positions.** Serving as lecturers, researchers, and academicians at universities and higher education institutions in the fields of horticulture, plant sciences and agricultural economics.
- **Research Scientists.** Conducting advanced research in national and international research centers, agricultural institutes, seed technology and postharvest systems.
- **Public Sector and Government Agencies.** Working as senior agricultural engineers, inspectors, or policy advisors in ministries of agriculture, food safety authorities, and rural development institutions.
- **International Organizations and NGOs.** Contributing to global programs on food security, traceability, climate-smart agriculture, biodiversity conservation, and sustainable horticulture as project leaders or consultants.

- **Industry and Agribusiness Leadership.** Taking managerial or executive roles in horticultural enterprises, greenhouse companies, seed and seedling firms, agricultural biotechnology companies, and agro-export organizations.
- **Consultancy and Advisory Services.** Providing expertise to producers, cooperatives, agribusinesses, and governmental or non-governmental projects on sustainable horticultural production and marketing strategies.
- **Entrepreneurship and Innovation.** Establishing innovative businesses in advanced plant production technologies, certified seedling and seed production, organic farming, and value-added processing and marketing of horticultural products.

Graduates of the program are uniquely positioned to shape the future of horticultural science and practice by combining advanced research skills with the ability to influence agricultural policies, industry standards, and international development strategies.

**Contact Information**

*Head of Department*
Assoc. Prof. Dr. İbrahim Kahramanoğlu – ikahramanoglu@eul.edu.tr

# COURSE CATALOGUE DESCRIPTIONS

**ES638 Water Reuse Technologies**
Introduction to the basic concepts and issues involved in water reuse. Water conservation methods. Potential reuse applications. Sources of water for reuse. Collection of rain-water for various purposes. Treatment technologies suitable for water reuse applications. Criteria for each type of reuse application. The overall procedures for determining the feasibility and planning of water reuse systems as well as the management structure of reuse projects. The management of the biosolids resulting from the treatment of wastewater and related regulations governing their use and disposal. Reuse of treated wastewater effluents for irrigation. Separate collection and treatment of grey water from black water for reuse purposes.

**AGRH607 Seed Control and Certification**
Purpose of control and certification of vegetable seeds; general principles of control and certification systems; certification systems applied in Turkey and world; international organizations for seed certifications; control process in fields; sampling, packing and labelling of seeds for certification purpose; laboratory testings; seed import and export regulations.

**AGRH609 Citrus Breeding**
Improving the quality and resistance against storage, pest and diseases; general principles of modern breeding technics; hybridization, mutation and tissue culture.

**AGRH606 Advanced Greenhouse Technics and Technologies**
Choosing type of greenhouse and location to construct, evaluation of ecological conditions for different production models. Control principles of ecological factors. Evaluation of plant growing mediums for different production models. Soilless culture, production of seedlings. Recent developments in greenhouse vegetable and fruit cultivation.

**AGRH620 Vegetable and Fruit Pests**
Identification of insects which are harmful and cause damage on vegetable and fruits (morphological and biological properties). Many insects interact with plants, which they use particularly for feed, shelter and fuel. If densities of herbivorous insects are high enough they can become crop pest which require attention and maybe action. To do this as economical and sustainable as possible requires an ecologically based knowledge and understanding of: Insect-plant-ecology and more specifically the influence of soil, weather, fertilization, irrigation etc. on crop pest and their natural enemies. Monitoring and forecasting methodologies (development and function of systems) as well as control methods and overall management strategies (incl. legal and advisory implications). Prevention of attacks and manipulation of pest insects and their natural enemies through rotation and choice of crop, and farming system (organic, integrated, conventional). Influence of plant protection on wild flora and fauna of arable fields.

**AGRH621 Soil-Plant Relationship**
Plant nutrients; nutrient uptake and its dynamics in soil; dynamic of the soil plant system; ion movement in soil; allelopathy; effects of soil chemical specifications on plant growing; effects of soil pH on plant growing; effects of soil physical characteristics on plant growing; soil texture and structure; effects of growing plants on soil chemical and physical properties; effect of nitrate and

ammonium nutrition of plants on soil pH; root exudates and their effects on soil chemical and physical properties; root exudates and soil micro organisms.

**AGRH613 Agriculture and Environment**
The uses and the problems which created in environment. Agricultural systems which are comptible with environment. Integrated agriculture, the benefits to the local people and the environment. Why should the environment and nature be protected. System approaches and planning method in environment and nature protection. Legal and environmental grounds of national and international protection of the environment and nature. The importance of protecting the environment and nature and the applications in Cyprus. The EU's environmental and conservation regulations, the FFH-Directives and the Natura 2000 protected area network system. Protected areas and problems in Cyprus.

**AGRH600 Thesis**
Supervised independent research on a topic arranged between the student and a faculty member and approved by the Administrative Committee of the Institute. It must be an original contribution to the field of horticultural production and marketing.

**AGRH690 Seminar**
The expression of the subject, objectives and the discussions on the related theoretical issues, presentation of the consequences, the discussions of the thesis in regard to contemporary developments in horticultural production and marketing.