ΜΟΝΑΔΑ ΔΙΑΣΦΑΛΙΣΗΣ ΠΟΙΟΤΗΤΑΣ Α.Π.Θ.

School of Agriculture (Coordinating School) in collaboration with the School of Chemistry

Joint English Undergraduate Program of Studies (JEUPS) “Sustainable Agriculture and Food Science”

Study Guide JEUPS
(in English)

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Important clarification: **For specific issues regulated by the Study Regulations and also referred to this Study Guide, in case of disagreement, the Study Regulations shall prevail.**

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Foreword

Dear students,

It is with great pleasure that I welcome you to the Joint Undergraduate Program "Sustainable Agriculture and Food Science", a five-year full-time program leading to a fully recognized Integrated Master's Degree (300 ECTS, Level 7 of the European Qualifications Framework), offered jointly by the School of Agriculture and the School of Chemistry of Aristotle University of Thessaloniki.

This integrated structure allows you to complete undergraduate and postgraduate studies in a single academic program, providing advanced scientific training, professional specialization and direct access to doctoral studies and high-level professional careers in the agri-food sector.

By joining the program, you become a member of one of the oldest and most distinguished academic communities in the fields of Agricultural and Chemical Sciences in Southeast Europe. The School of Agriculture of Aristotle University of Thessaloniki, founded in 1927, has played a decisive role in the development of agricultural science, food production, environmental protection and rural development in Greece and internationally. Complementing this long tradition, the School of Chemistry contributes with strong expertise in chemical sciences and environmental analysis, further enhancing the interdisciplinary nature of the program. Since its establishment, the School of Agriculture has adopted a comprehensive approach covering the entire agri-food chain — from primary production and natural resource management to food processing, quality, safety and sustainability.

Aristotle University of Thessaloniki is consistently ranked among the top institutions in Europe in the fields of Agriculture and Food Science. According to the EduRank ranking, it ranks 22nd in Agriculture and 17th in Food Science in Europe.

Studying on this program will equip you with the advanced scientific knowledge, critical thinking skills and practical abilities necessary to tackle important global challenges such as climate change, food security, biodiversity loss, sustainable natural resource management, and the transformation of agri-food systems.

AUTH — the largest university in Greece and one of the most important in Southeast Europe — offers a dynamic multicultural environment with distinguished teaching staff, modern infrastructure, libraries, advanced research facilities and extensive student support services.

University life is not only a period of study but also one of personal development, intercultural exchange and creative exploration. We encourage you to take full advantage of the opportunities offered to you.

I assure you that the teaching and administrative staff are fully committed to supporting you.

I wish you every success in your studies.

Welcome to our academic community.

Thomas Kotsopoulos, Professor
Head of the School of Agriculture – Coordinating School
Aristotle University of Thessaloniki

1. Thessaloniki

Thessaloniki, Greece's second city, is one of the oldest in Europe. Built amphitheatrically on the shores and hills of the Thermaic Gulf, it stretches for many kilometers. It was built by Cassander, king of Macedonia, around 315 BC, and named after his wife, Thessaloniki, sister of Alexander the Great. Since then, Thessaloniki has become the most important city in Macedonia and its main commercial port. In Roman times, Paul, the Apostle of the Nations, visited the city and preached the new religion. He later sent the Christian inhabitants his two well-known epistles "to the Thessalonians," which are among the oldest monuments of Christian literature.

During the Byzantine period, Thessaloniki became the second spiritual and artistic centre of the empire, after Constantinople. Great figures of religion, science and art are associated with its Byzantine past: the jurist Petros Magister, the epigrammatist Macedonius Hypatus, the hymnographer Archbishop Joseph, Leo the Mathematician, the historian John Kameniatis, Archbishop Eustathios of Thessaloniki, prolific Homeric scholar and humanist, philologist Thomas Magister, law professor Constantine Armenopoulos, author of the "Exavivlos," the theologian Gregory Palamas, Archbishop of Thessaloniki, and others. During the same period, the missionary brothers Cyril and Methodius played a special role in spreading Christianity among the Slavs and, in order to facilitate their missionary work, invented a special alphabet, the Cyrillic alphabet, which is still used today by almost all Slavic languages.

Later, when Thessaloniki first (1430) and then Constantinople (1453), the two main intellectual centres of the East, succumbed to the Turkish invasion, among the Greek humanists who sought refuge in the Christian West and transplanted Greek culture there, two were from Thessaloniki, Theodoros Gazis and Andronikos Kallistos. And during the Ottoman occupation, even though times were very difficult, Greek schools operated in Thessaloniki, preserving the tradition of Greek education until its liberation on 26 October 1912, the anniversary of its patron saint, Saint Demetrius. During the 19th century, the intellectual tradition of the city was continued by the historian, archaeologist and geographer Margaritis Dimitsas, who was also the director of the city's Gymnasium, and by his student P. Papageorgiou, who later became a distinguished philologist.

Numerous monuments from the city's historical past have been preserved. In the Thessaloniki area, the first organised settlements were established at the end of the 4th millennium BC. A prehistoric culture developed in these settlements within the framework of a mixed economy based on agriculture, livestock farming and gathering. This culture was gradually transformed through contact with other Greek cultures and spanned two millennia, approximately until 1100 AD. From this period, known as the Iron Age, the region experienced cultural balance in all areas. This helped the development of small settlements such as Thermi, Apollonia, Chalastra, etc., which evolved independently. Evidence of this development can be found in the rich archaeological finds discovered in many parts of the city of Thessaloniki, dating back to before 315 BC. The significant development of these small settlements led to the founding of Thessaloniki, i.e. their consolidation, as happened in Athens with Theseus. This settlement, which was formalised in 315 BC, signified the decision to bring together the socio-economic elements scattered throughout the wider region since the prehistoric period of the Thessalian-Macedonian period and to play their special historical role under a single central authority. Thus, the new city of Thessaloniki, founded by Cassander, acquired great economic and political power and imposed itself as a cultural presence in Macedonia.

It is perhaps strange that, despite its significant political and economic importance, Thessaloniki did not win the "sympathy" of the kings of the Macedonian state, who were based in Aigai and Pella. The city gained political primacy during the Roman period, when it reached its peak, and the Roman general Aemilius Paullus named it the capital of Macedonia and Epirus. Of great interest from the Roman period are the Arch of Galerius (the "Kamara") and the Rotunda. From the Byzantine era, temples representing the various periods of Byzantine art, rich in exquisite mosaics and frescoes, have been preserved and are the jewels of the city: Agios Dimitrios, Acheiropoietos, Agia Sophia, Agioi Apostoloi, Agia Aikaterini, Panagia Chalkeon, Agios Nikolaos Orfanos, Profitis Ilias, the Vlatadon Monastery, and Osio David. A large part of the city walls are still preserved, part of which was the White Tower, the Eptapyrgio, etc. The continuous contact and interaction between Mount Athos and Thessaloniki was remarkable from a national, spiritual and artistic point of view.

A new period of material and spiritual development for Thessaloniki began with its liberation from Turkish rule. Thessaloniki became the main economic, political and cultural centre of Northern Greece and the second largest and most important city in the country. Today, Thessaloniki is the seat of the Ministry of Macedonia-Thrace, the Metropolis, the Court of Appeal and other administrative authorities. The city can be divided into two parts: the older neighbourhoods, which are constantly changing with new constructions, and the area with modern buildings, most of which are apartment blocks.

In addition to Aristotle University, numerous institutions contribute to the creation of a broader intellectual climate in the city: the University of Macedonia, the International University of Greece, its museums (Archaeological, Byzantine, Folklore, etc.), the State Conservatory, the State Theatre, the State Orchestra, the Society of Macedonian Studies, the Foundation for the Study of the Chersonese of Aemos, and other intellectual and artistic structures. Characteristic features of Thessaloniki's flourishing economy, which is one of the most important commercial and transport centres in the Mediterranean, are its port, which with its Free Zone also serves other Balkan countries, its international airport, the internationally renowned Industrial Area and the International Exhibition.

2. Aristotle University of Thessaloniki (AUTH)

2.1. History-Structure

The University of Thessaloniki (which was later renamed Aristotle University of Thessaloniki) was founded by the first Hellenic Republic. On the recommendation of Alexander Papanastasiou, the Fourth National Assembly passed Law 3341 on 14 June 1925, establishing five faculties: Theological, Philosophy, Law and Economics, Natural and Mathematical Sciences, and Medicine. The Philosophy Faculty was the first to begin operating in 1926. It was followed in the academic year 1927-28 by the Faculty of Natural and Mathematical Sciences, initially with the Faculties of Agriculture and Forestry and, from 1928-29, with new Faculties of Physics and Mathematics. In the same year, the Law Faculty began operating, and in 1929-30, the Faculty of Political and Economic Sciences of the Faculty of Law and Economic Sciences was established. Since then, many Faculties have been created and are now operating, covering the entire spectrum of sciences and fine arts.
AUTH is now the largest and most complex university in Greece, with 11 Faculties and 41 Schools (Figure 1). There are 61 clinics (medicine, dentistry, and veterinary medicine), 295 established laboratories and 23 study rooms. The Central Library of the Aristotle University of Thessaloniki, one of the largest in the Balkans, together with the 45 regional libraries of the Schools and Faculties (17 of which are institutionalised) constitute the library system of the Aristotle University of Thessaloniki. The Aristotle University of Thessaloniki offers 43 undergraduate programs and 185 postgraduate programs, with 90,299 students enrolled, of whom 76,987 are enrolled in undergraduate programs and 8,496 in postgraduate programs. In addition, 4,609 are doctoral candidates. The teaching and research staff (Δ.Ε.Π.) numbers 1,612, the laboratory teaching staff (Ε.ΔΙ.Π.) numbers 371, and the special teaching staff numbers 98. The educational work is also assisted by 127 members of the Special Technical Laboratory Staff (E.T.E.P.), while 253 permanent employees and 267 employees under private law contracts of indefinite duration (I.D.A.X.) work in administration.
The majority of Aristotle University facilities are located within the **Central Campus** in the centre of Thessaloniki, covering an area of 334,000 m^2. However, due to the dense construction of the Central Campus, but also for operational reasons, some of the University's facilities are located outside the campus or even outside the urban complex of Thessaloniki, the most important of which are **the facilities in Thermi**, which house the School of Visual and Applied Arts, the School of Music Studies of the School of Fine Arts, and the School of Physical Education and Sports Science. Other facilities of the Aristotle University of Thessaloniki outside the campus include the **University Farm** (covering an area of 180 hectares at the eastern exit of Thessaloniki), **the Veterinary School Clinics** (at 11 Stavrou Voutyra Street, opposite the old railway station), **the facilities of the School of Forestry and Natural Environment in Foinika**, **Thessaloniki**, where the Museum of Wild Fauna and the Forest Botanical Garden are located, **the University Excavations** (in Vergina, Dion, Pella, Philippi, Karabournakis and Toumba, Thessaloniki), the **Centre for Byzantine Research** (at 36 Vas. Olgas Street), the **Teloglion Foundation of Arts** (at 159A Agios Dimitrios Street), the **Seismological Station** (at 43 Vyzoukidou Street, 40 Churches), the **Meteorological Stations of Olympus**, the **University Forests** in Pertouli, Pindos, and Taxiarchis, Chalkidiki, which are used for student training and forest research. Finally, the School of Physical Education and Sports Science of Serres is located in Agios Ioannis, Serres.

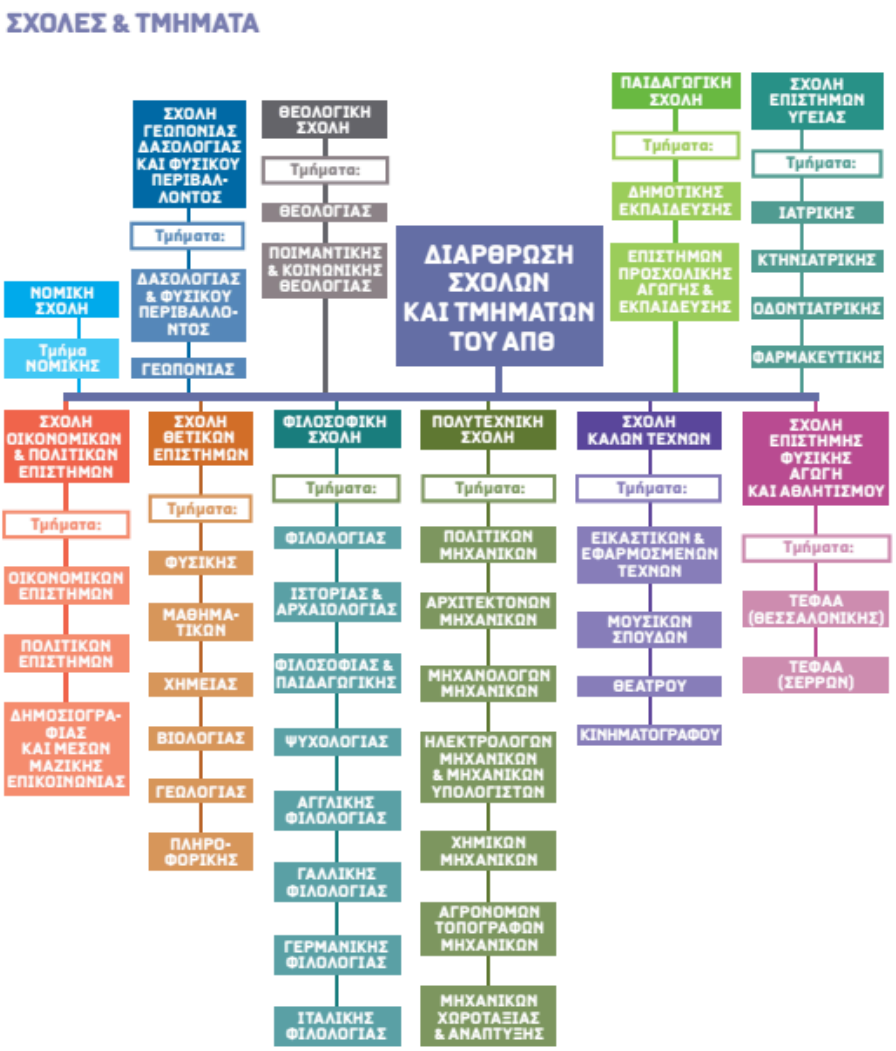

Figure 1. Faculties and Schools of the Aristotle University of Thessaloniki

2.2. Student welfare – services for students

All Aristotle University students have the opportunity to contact the University's specialised services for specific reasons in order to receive support for issues they may encounter during their studies. At the same time, they can, if they wish, participate as volunteers, offering their help to fellow students who need it.
More information about the Aristotle University services can be found at: https://www.auth.gr/en/services-en/

2.2.1. Libraries & Information Centre of the Aristotle University of Thessaloniki (AUTH)

The Library and Information Centre (ΒΚΡ) of the Aristotle University of Thessaloniki is one of the largest academic libraries in the country and a key pillar of support for education, study and research. It provides access to an extensive collection of printed and electronic material, such as books, scientific journals, databases, dissertations and digital sources. Students can use the study areas of the Central Library and the individual School libraries, borrow books,

search for material through the electronic catalogue and have remote access to electronic sources with their institutional account. The Library also provides user training services, support in searching for scientific information, access to computers and group study areas, as well as special services for people with disabilities or special educational needs.
The library premises are an important place for daily study and collaboration, especially during the exam period.

Useful Links & Contact Details:

🌐 VKP website: https://www.lib.auth.gr
🔎 Online Catalogue (OPAC): https://opac.lib.auth.gr
📚 Electronic sources & databases: https://www.lib.auth.gr/el/resources
📍 Central Library: Aristotle University of Thessaloniki Campus, Thessaloniki
📧 Email: info@lib.auth.gr
📞 Telephone: 2310 99 5300

2.2.2. Catering

Student meals are served in the Club's dining areas, which consist of two large halls with a capacity of 1,000 (Lower Club) and 500 people (Upper Club) respectively, while for the catering of the staff members of the Aristotle University of Thessaloniki, the Club http://www.pfl.auth.gr/ has two smaller halls.
Outside the Club, meals are provided to students of the decentralised Schools of the Faculty of Fine Arts in Thermi and Stavroupoli, at the T.E.F.A.A. in Serres and Thermi, at the Clinics of the Veterinary School, as well as at the Forestry facilities in Foinikas. Finally, during the summer months, the Club undertakes the catering of Forestry students who are doing their practical training in the University Forests in Pertouli, Trikala and Taxiarchis, Chalkidiki, and supports the operation of the Aristotle University of Thessaloniki Camp in Kalandra, Chalkidiki.
Today, the Club has the capacity to produce more than 15,000 meals per day. Free meals are provided to all undergraduate and postgraduate students who are not graduates of another university or technical college and do not have a high income themselves or whose parents do not have a high income (as evidenced by a tax office statement), to expatriates, Cypriots, foreigners who have been awarded a scholarship and certain other categories of students, under specific conditions.

2.2.3. Medical care – Health services

The health and social policy services of the Aristotle University of Thessaloniki include the Primary Health Care Centre, the Counselling and Psychological Support Centre, the regulations for student health care, the activities of the Social Policy and Health Committee and the Committee for Monitoring the Academic Progress of Aristotle University of Thessaloniki Students belonging to vulnerable social groups, as well as the operation of the Diagnostic Unit of the School of Dentistry.

Counselling and Psychological Support Centre (KESYPSY)
The Counselling and Psychological Support Centre (KESYPSY) of the Aristotle University of Thessaloniki provides free psychological support and counselling services to members of the university community. Its aim is to enhance the mental health, well-being and academic

adjustment of students, as well as to provide support for personal, emotional or educational difficulties that may arise during their studies.
The Centre's services are available to all Aristotle University students and staff. Individual counselling and psychological support are provided by specialised mental health professionals in an environment of confidentiality, respect and acceptance.
KESYPSY collaborates with other University committees and structures that are active in related issues and organises information events, seminars and workshops aimed at prevention, awareness and dialogue on mental health and student life issues, both with students and with administrative and other staff.
The Centre's objectives also include operating an open telephone helpline for people in crisis or facing personal difficulties. The possibility of anonymous communication, without visual contact, can make it easier for those who feel more secure to talk about their problems in this way.
The services of KESYPSY are confidential and aim at prevention, timely intervention and strengthening the mental resilience of members of the university community.

Contact details
📍 **Location:** Aristotle University of Thessaloniki Campus, Thessaloniki
📞**Telephone:** 2310 99 1313
✉️ **Email:** kesypy@auth.gr
🌐 **Website:** https://kesypy.auth.gr

Social Policy and Health Committee
The Social Policy and Health Committee of the Aristotle University of Thessaloniki aims to create conditions that make the University accessible and friendly to all members of the university community, with special care for people with disabilities. The main objective is to remove barriers that limit equal access to University facilities, services and knowledge.
In this context, actions are implemented to support students with disabilities or special educational needs. For example, students with visual impairments are trained by specialised faculty members in the use of special technological equipment in Aristotle University libraries, where Braille printers are also available. At the same time, efforts are being made to make textbooks available in accessible formats, such as audio recordings.
To facilitate daily transportation, a special bus service is provided for people with disabilities, which serves students during the academic year and exam period, contributing to their uninterrupted participation in the educational process.
The Committee also collaborates with organisations and structures that promote health and social support. In this context, the **Self-Help Promotion Programme** operates in collaboration with the Aristotle University of Thessaloniki and OKANA, providing support to people facing addiction and related psychosocial issues, promoting empowerment and social reintegration.
The Committee's actions aim to create an inclusive University where everyone can participate equally in academic and social life.

Contact
📧 **Self-Help Promotion Programme:** selfhelp@auth.gr
🌐 **Programme website:** http://www.selfhelp.gr/el/

2.2.4. Sports-Arts-Entertainment

Aristotle University of Thessaloniki has a modern University Gym where University students can exercise. The facilities are located next to the University Student Club (tel. 2310992672) and include gyms, football pitches, basketball courts, volleyball courts, tennis courts, etc.
The University Student Club has a games room, a music School for students with musical interests, a reading room, a low-priced canteen that operates as a record store in the evening, a low-priced barber shop and hairdresser, etc. Students of the School of Agriculture can also participate in the events of their student association, which include theatrical performances, educational or recreational excursions, and various cultural, social, and sporting events. In the summer, students can also holiday at the University's campsites in Posidi, Chalkidiki.

Digital Governance Unit (DGU) of the Aristotle University of Thessaloniki

The Digital Governance Unit (DGU) of the Aristotle University of Thessaloniki is responsible for the development, operation and support of the University's information systems and digital services. Its goal is to provide reliable and secure electronic services that facilitate studying, teaching and daily academic activities.
Through the services of the DGU, students gain access to all the basic digital infrastructure of the Aristotle University of Thessaloniki. With their institutional account, they can use the university email, network services, the Secretariat's information systems and distance learning platforms.
Obtaining and activating an institutional account is a prerequisite for accessing the University's electronic services. Through this account, students can register for courses, check their grades, receive certificates, and use the university email.
Of particular importance is access to the **eLearning** platform **(online courses)**, where notes, presentations, course announcements, exercises, assignments and other educational material are posted. Through this platform, lecturers communicate with students, organise online activities and collect assignments.
The DGU also provides technical support for issues such as account activation, password recovery, connection problems, and use of digital services.

Useful Links

🎓 **eLearning (Online Courses):** https://elearning.auth.gr
📝 **Course registration & Secretariat services (SIS):** https://sis.auth.gr
🔑 **Obtaining/activating an institutional account:**https://register.auth.gr
🌐 **MPS website:**https://it.auth.gr
📧 **User support (Helpdesk):** support@auth.gr
📞 **Helpdesk telephone number:** 2310 99 9000

3. The School of Agriculture

3.1. Historical Development

The School of Agriculture was established by the Legislative Decree of 7th October 1927 "On the attachment of the Schools of Forestry and Agriculture to the University of Thessaloniki" (Government Gazette A 215/1927), as a School of the Faculty of Physical and Mathematical Sciences. Since the establishment of the University of Thessaloniki by Law 3341/1925, it was envisaged that the School of the Faculty of Physical and Mathematical Sciences would award a degree in Agriculture. The commencement of operation of the School and each of its Schools, in accordance with Article 19 of Law 3341/1925, required the issuance of a decree following a decision by the Council of Ministers.

The following were designated as regular chairs of the School of Agriculture in the founding decree:

1. Agricultural Zoology and Entomology (this chair will also include Sericulture and Beekeeping)
2. Anatomy and Physiology of Farm Animals (this chair would also include farm animal health and elements of veterinary medicine)
3. Agricultural Engineering
4. Plant Pathology
5. Agricultural Hydraulics and Construction
6. Agronomy (general and specialised) and a encyclopaedia of agronomy
7. Animal husbandry (general and specialised)
8. Agricultural Economics
9. Agricultural Technology (winemaking, brewing, distilling, dairy farming, olive oil production, etc.)
10. Viticulture
11. Arboriculture, olive growing, horticulture and floriculture
12. Mathematics and Engineering
13. Topography, Road Construction and Forest Transport
14. Political Economy
15. Public finance and statistics
16. Elements of Law

The following were appointed as temporary chairs of the School of Agriculture:

1. Accounting
2. Hygiene
3. Agricultural Settlement Planning and Architecture

From its inception, the School of Agriculture has been characterised by a comprehensive and interdisciplinary approach, covering every aspect of the agri-food chain, responding to the needs of the primary sector, the processing of agricultural products and food production. Its field of study included, among other things, the Anatomy and Physiology of Farm Animals, including hygiene and veterinary science, as well as Animal Husbandry at a general and specific level. The science of plant production included Agricultural Zoology and Entomology, Agronomy (general and specific), Plant Pathology, Viticulture, Arboriculture, Olive Growing, Horticulture and Floriculture. At the same time, Agricultural Technology covered the processing and utilisation of agricultural products, such as winemaking, brewing, distilling,

dairy production and olive oil production. The technological support dimension was expressed through Agricultural Engineering, Agricultural Hydraulics and Construction, Topography, Road Construction and Forest Transport, as well as Mathematics and Mechanics. The curriculum also included subjects that reinforced the administrative and economic aspects of agricultural science, such as Agricultural Economics, Politics and Public Economics, Statistics, Elements of Law and Accounting. In addition, knowledge of Hygiene, Agricultural Settlement Design and Architecture complemented the education of graduates, enabling them to meet the multidimensional requirements of the agri-food sector. Through this wide range of subjects, the School of Agriculture developed and promoted the synthesis of sciences related to production, technology, economics, environmental protection and quality of life in rural areas, demonstrating its interdisciplinary nature in practice.

Milestones in the history and development of the School of Agriculture:

1936: The transfer of the Farm from the State to the University of Thessaloniki was institutionalised by the Emergency Law of 15 January 1936, under the title "On the ratification of the transfer of the farm to the University of Thessaloniki and the establishment of a fund for its administration and management" (Government Gazette A 52/1936). By virtue of this legislative provision, the farm located in the airport area was granted to the University in full ownership and possession, for the sole purpose of meeting the educational and research needs of the School of Agriculture. Since then, the Farm has been the fundamental natural space of the School, systematically and continuously supporting the development of the educational process and the promotion of scientific research across the entire spectrum of agricultural subjects.

1937: With Compulsory Law 835 of 17 September 1937, entitled "On the amendment and supplementation of Law 3341 'on the establishment of a University in Thessaloniki'", an independent Faculty of Agriculture and Forestry was established, which awarded degrees in Agriculture and Forestry, and the duration of study was increased to five years. At the same time, the abolished Higher School of Agriculture of Athens (HSAA) was incorporated into it, making our School the only one providing agricultural education in Greece until the re-establishment of the HSAA in 1943.

In 1981, the two Schools of the Faculty of Forestry and Agriculture were separated and the School of Agriculture operated as an independent Faculty, under the name Faculty of Agriculture (Presidential Decree 296/1981). In 1983, Law No. 1268/1982 established the Faculty of Geotechnical Sciences, which included the School of Agriculture. In 2004, the Faculty of Geotechnical Sciences was abolished (Presidential Decree 247/2004), and by decision of the Senate, in 2005 the School of Agriculture became independent and was upgraded again to the Faculty of Agriculture, with the School of Agriculture as its only School. In 2013, the Faculties of Agriculture and Forestry and Natural Environment merged to form the new Faculty of Agriculture, Forestry and Natural Environment, with two Schools: the School of Agriculture and the School of Forestry and Natural Environment (Presidential Decree 98/5-6-2013).

The scientific subjects covered since the establishment of the School of Agriculture have gradually expanded to cover practically all areas of Agricultural Science, supporting both education and research across the entire spectrum of agricultural subjects.

3.2. Buildings and facilities

3.2.1. The University Campus Building

The buildings and facilities of the School of Agriculture are located on the University Campus and at the Aristotle University Farm. The University Campus building is one of the first buildings constructed to meet the needs of our University. The building consists of three internally connected wings, the middle one of which houses its four lecture halls. Three other classrooms and a common exercise room located in the other two wings cover the teaching needs of the students of the two Schools of the Faculty of Agriculture, Forestry and Natural Environment housed in the same building. There are also many laboratory rooms for students with modern laboratory equipment, which is constantly being upgraded with the purchase of new instruments.

Image 2. View of the building of the Faculty of Agriculture, Forestry and Natural Environment during construction

Image 3. Current view of the building of the Faculty of Agriculture, Forestry and Natural Environment

The School Library has been operating on the ground floor of the building since September 1994. All of the School's books acquired since 1994, as well as most of the older ones, can be found through the online catalogue (http://nebula.lib.auth.gr) and are available for loan to

those who have a library card. Scientific journals are located in the School's Library and Laboratories and can be found through the detailed catalogue available in the Library. It is also possible to borrow books, articles, dissertations, etc. from the British Library, as well as to order articles from journals that are not available at Aristotle University of Thessaloniki from other scientific libraries in the country (services subject to a fee).
The library has a reading room with 25 seats. There are black and white and colour photocopiers. There are two computers for bibliographic searches in the electronic sources of the Aristotle University of Thessaloniki (electronic journals, databases, etc.) and for Internet research, as well as a laser printer, which students can use at a charge.
In recent years, new buildings have been constructed on the farm, and once their construction is complete, the School is expected to relocate to the Farm*. Despite the difficult economic situation, efforts are being made to complete the relocation of the School to the Farm as soon as possible.*

Figure 4. New building on the university farm

3.2.2. The Farm for the activities of the School of Agriculture

The Farm is the fundamental physical and functional space of the School, contributing significantly to education, research and innovation across the entire agri-food chain. Through the systematic and continuous support of the educational process and applied research, the Farm operates as a living laboratory, where students and researchers combine theoretical knowledge, technological applications and sustainable practices to promote sustainable agriculture, livestock farming and food production. The University Farm is located at the eastern exit of the city, in the area of "Macedonia" Airport. It covers an area of approximately 1,80 hectares and is the natural home of the School of Agriculture, as it is where the laboratory exercises for most courses and almost all the experimental work for undergraduate, postgraduate and doctoral theses.

Figure 5. Stone buildings on the University farm

The University farm has educational and research crops, livestock breeding, as well as model agricultural and livestock farms. Specifically, among other things, there are areas with ploughing, arboriculture, viticulture, floriculture, greenhouse and other agricultural crops, stables where select breeds of farm animals are raised (cattle, sheep, goats, pigs, poultry, horses, etc.), bee farms, complete agricultural and livestock equipment, and modern plant protection methods are developed.

Figure 6. Hydroponic tomato cultivation in a greenhouse

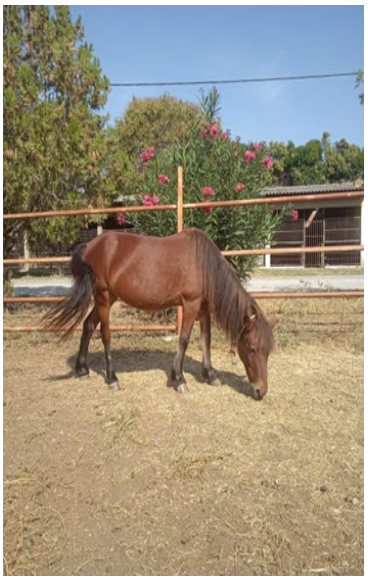

Image 7. Farming of livestock

There are currently 21 buildings on the farm's land, which belong to the Departments and Laboratories of the School of Agriculture and are used for teaching and research activities.

3.3. Activities of the School

Throughout its long history, the School of Agriculture has carried out important research and educational work and, with its thousands of graduates, has contributed significantly to the agricultural development of our country.
As part of the educational process, educational trips are regularly organised to bring students into contact with the problems and prospects of primary activity in Greece. These problems and opportunities serve as stimuli for the development of the educational and research programmes of the School of Agriculture. In many cases, these contacts provide an opportunity to examine specific issues through direct contact between producers and members of the School's academic staff. Such collaborations may also take place through the mediation of broader public sector organisations involved in the country's development programmes. To this end , many studies have been carried out to address problems faced by various organisations, local government, the private sector and the European Union.
In addition, the School's academic staff are frequently invited to participate in scientific conferences and workshops on Greek agriculture, livestock farming and rural development, organised by various public and private bodies. The School has many research collaborations with private sector organisations on issues related to plant protection, plant cultivation, new plant varieties, pesticide residues in plants, soil and water, food, greenhouses, irrigation networks, agricultural machinery, soil analysis, livestock structures, innovation, etc.
In the production sector, the School uses its scientific knowledge to assist in the production of products on the Farm. Such products include seedlings of new varieties, breeding animals, and seeds of high-yield livestock and cereal crops, as well as milk production.
Since March 2012, the School of Agriculture, in collaboration with the university authorities and the farm management, has created **600 urban gardens** on the University Farm, which, after a lottery, were made available to citizens of Thessaloniki to cultivate and produce agricultural products for their families' needs, in accordance with the principles of organic farming. Students of the School have the opportunity to work in the gardens, gaining experience and knowledge of vegetable growing and organic farming.
Students of the School of Agriculture can be members of the "Agricultural Students' Association". The role of the Agricultural Students' Association is to promote and resolve issues that concern students and to contribute to the improvement of the School's operation in collaboration with the professors. The Association's office is located on the second floor of the School building (tel. 2310998620). The Student Association often organises scientific and cultural events, with great success.

3.3.1. Connection with society, the economy and the promotion of innovation

- ***Participation of the School in local and national development processes***
  - The School participates through two representatives (full member and alternate) in the National AKIS Committee for Agricultural Research and Innovation
  - The School participates through two representatives (full member and alternate) in the Scientific Committee on Agricultural Pesticides of the Ministry of Rural Development and Food
  - The School participates with a member in the Technical Advisory Committee on Fertilisers (TEGEL) of the Ministry of Rural Development and Food

- ***Strengthening innovation through research and the transfer of know-how to the market, the development of new technologies and the creation of start-up companies.***
  - Through its research programmes, the School promotes innovation in all areas of the agri-food chain, and its collaboration with numerous companies means that the market trusts the School.
  - Three start-up companies founded by graduates of the School of Agriculture were also established and awarded prizes in June 2025, demonstrating in the most emphatic way the connection between the School's teaching and entrepreneurship and innovation.
- ***Actions that connect the School with society and the economy, and collaborations with businesses and social organisations, chambers of commerce, public or private organisations, and information days on topics related to the School's field of study.***

Numerous actions through research programmes and guest speakers at various information panels organised by municipalities, regions and private bodies, participation in working groups of the Technical Chamber of Greece, Honey Festival, Farmers' Market Festival, etc.

3.4. Organisation and Administration of the School of Agriculture

The administrative bodies of the School are the Head and Vice-Head and the School Assembly, which consists of representatives of professors of all ranks, various categories of staff and students. The Assembly meets under the responsibility of the Chair and takes decisions on matters concerning the educational, research and administrative activities of the School.
The School of Agriculture of the Aristotle University of Thessaloniki has seven Divisions. Each Division has laboratories and study rooms related to its field of study. Each Section is administered by its Director and General Assembly, while each Laboratory is administered by its respective Director.
For the academic year 2025-26, the composition of the School's administrative bodies are as follows:

SCHOOL HEAD:
Thomas Kotsopoulos, Professor tel. 991796
SCHOOL VICE-HEAD:
Mamolos Andreas, Professor 998642

DEPARTMENTS DIRECTORS:
1. Field Crops and Ecology
   Mavromatis Athanasios, Professor 998784
2. Horticulture and Viticulture:
   Hatzilazarou Stefanos, Associate Professor 990308
3. Plant Protection:

Anastasia Lagopodi, Professor
998842

4. Animal Production:
Georgios Michailidis, Associate Professor
991712

5. Agricultural Economics:
Parlalidou Maria, Professor
998701

6. Hydraulics, Soil Science and Agricultural Engineering:
Matsi Theodora, Professor
998682

7. Food Science and Technology:
Katsanidis Evgenios, Professor
991640

SCHOOL SECRETARY:
Vouvari Georgia
995187

All Laboratories per Department are listed below.

Agricultural Economics
1. Agricultural Economic Research
2. Agricultural Product Marketing, Agricultural Policy and Cooperatives
3. Agricultural Applications and Rural Sociology
4. General and Agricultural Accounting Laboratory
5. Agricultural Law Laboratory

Hydraulics, Soil Science and Agricultural Engineering
1. Agricultural Mechanization
2. Applied Soil Science
3. General and Agricultural Hydraulics and Improvements
4. Soil Science
5. Agricultural Structures and Equipment
6. Remote Sensing Spectroscopy and Geographic Information Systems
7. Alternative Energy Resources in Agriculture

Food Science and Technology
1. Milk Technology
2. Food Processing and Engineering
3. Microbiology and Food Hygiene
4. Food Chemistry and Biochemistry
5. Oenology and Spirits

Animal Production
1. Farm Animal Physiology and Reproduction

2. Farm Animal Nutrition
3. Animal Husbandry
4. Ichthyology and Fisheries

Horticulture and Viticulture
1. Pomology
2. Biology of Horticultural Plants
3. Floriculture and landscape Architecture
4. Viticulture
5. Vegetable Crop Production
6. Bee culture – Sericulture

Plant Protection
1. Plant Pathology
2. Applied Zoology and Parasitology (Entomology)
3. Agricultural Pesticides

Field Crops and Ecology
1. Ecology and Environmental Protection
2. Agricultural Chemistry
3. Plant Genetics and Breeding
4. Agronomy

In addition to the above 34 laboratories, the School also operates the Laboratory of Information Technology in Agriculture, which is integrated into the structure of the School.

4. The School of Chemistry

The School of Chemistry of the Aristotle University of Thessaloniki was established during the German Occupation by Legislative Decree 430/1943. However, since the establishment of the University of Thessaloniki by Law 3341/1925, it was stipulated that "The Faculty of Physical and Mathematical Sciences awards a degree in Industrial Chemistry" and for this reason, a relevant Presidential Decree of 1929 established "Chemistry" and "Agricultural Chemistry" laboratories were created. The French-educated pharmacist/chemist Tryfon Karantasis was the first professor to teach Chemistry at the University of Thessaloniki.

In the course of events and prior to the establishment of the School of Chemistry, T. Karantasis divided the General Chemistry Laboratory into three separate laboratories: Organic, Inorganic and Physical Chemistry. Inorganic and Physical Chemistry Laboratories, where, shortly before the declaration of war in 1940, Georgios Varvoglis, Konstantinos Kavasiadis and Leandros Kapatos took up positions as full professors, respectively. This structure formed the basis of the newly established School of Chemistry, whose chemical laboratories operated in the basement of the Philosophy Faculty building, the only university building at the time.

A decisive milestone in the progress and development of the School was the construction of the old Chemistry building, for which a fundraiser was organised and the city's business community was asked to contribute. The building's foundations were laid in

1951 and, with a grant from the State, its construction was completed and it was inaugurated in 1957. Since then, the School of Chemistry has experienced rapid growth. The scientific research and teaching staff increased rapidly, and the scientific subjects covered gradually expanded to cover practically all areas of chemistry. In addition to the initial core subjects (Organic, Inorganic and Physical Chemistry), new Chairs/Laboratories were created in Analytical Chemistry, Inorganic Chemical Technology, Organic Chemical Technology, Food Chemistry, Biochemistry, Environmental Pollution Control and Quantum Chemistry. The growth of the School led to the need for more space, which was met in 1978 with the construction of the nine-storey building of the new Chemistry School.

A second important milestone in the history of the School, as well as all higher education institutions in the country, was the educational reform of 1982. With Law 1268/1982, the Schools acquired administrative entity and the role of the Dean of the Faculty was weakened. The professorial chairs and the institution of the Assistant Professor were abolished and a new academic unit, the Section, was established. All members of the Teaching and Research Staff (TRS) were incorporated into the Sections. With few changes since then, this administrative organisation remains the same. The current structure of the School of Chemistry at Aristotle University of Thessaloniki comprises four Sections, which include the existing Laboratories, as follows:

School of General and Inorganic Chemistry, which includes the Laboratory of Inorganic Chemistry and the Laboratory of Quantum and Computational Chemistry.

The School of Organic Chemistry and Biochemistry, which includes the Organic Chemistry Laboratory and the Biochemistry Laboratory.

Physical, Analytical and Environmental Chemistry Section, which includes the Physical Chemistry Laboratory, the Analytical Chemistry Laboratory, the Environmental Pollution Control Laboratory

and the Laboratory of Chemical Education, Application of Information and Communication Technologies in Chemistry.

School of Chemical Technology and Industrial Chemistry, which includes the Laboratory of Chemical and Environmental Chemistry, the Laboratory of Polymer and Colour Chemistry and Technology, and the Laboratory of Food Chemistry and Technology.

The School of Chemistry at Aristotle University of Thessaloniki is looking forward to the future and the scientific challenges ahead with optimism. It has experienced teaching and research staff with high scientific training, capable of facing the difficulties that exist and standing up to the competitive international environment.

Facilities:

The School of Chemistry is housed in two buildings on the university campus, the main Chemistry Building and its new wing. The distribution of laboratories and classrooms in these two buildings is as follows: Central Chemistry Building (old Chemistry Building) Basement: Classroom C. Ground floor: Physical Chemistry Laboratory (EFCH), Chemical Education Laboratory, Application of Information and Communication Technologies in Chemistry (HEETPE) and Classroom A. 1st floor: Organic Chemistry Laboratory (OCH) and N. Alexandrou Amphitheatre. 2nd floor: Inorganic Chemistry Laboratory (ICL) and Quantum and Computational Chemistry Laboratory (QCCL). 3rd floor: Biochemistry Laboratory (EBCH) and Environmental Pollution Control Laboratory (EEPL).

New Chemistry Wing. Ground floor: Chemistry School Library and Lecture Hall. Ground floor, 1st, 2nd and 3rd floors: Chemical and Environmental Technology Laboratory (ECET). 4th, 5th and 6th floors: Analytical Chemistry Laboratory (EANCH).€ 7th, 8th and 9th floors: Polymer

and Colour Chemistry and Technology Laboratory (EChTePCh) and Food Chemistry and Technology Laboratory (EChTeT)

School Administration:

The School of Chemistry is administered by the School Assembly (SA), the Administrative Council (AC) and the School Head. The AC. consists of 16 faculty members, the directors of the Divisions, the School Head, the School Vice-Head and 1 member of the Special Teaching Staff. The Head convenes the SA. and the A.C., having set the agenda, chairs their proceedings and makes recommendations on the items on the agenda. He/she also keeps the register of faculty members and supervises the implementation of the decisions of the Academic Council.

➢ The Head of the School of Chemistry for the three-year period 2025-2028 is Professor Theodoros Karapantzios.

➢ The Vice-Head of the School of Chemistry for the three-year period 2025-2028 is Professor Victoria Samanidou.

➢ The Secretary of the School of Chemistry is Ms. Stavrakaki Lydia.

5. Academic Calendar

The academic year begins on 1 September and ends on 31 August of the following calendar year. The educational programme for each academic year is divided into two semesters, winter and spring, each of which includes 13 weeks of teaching and two or three weeks of examinations.

- The winter semester begins in the last week of September and ends at the beginning of the last ten days of January. This is followed by the first examination period of the winter semester.
- The spring semester begins in mid-February and ends in late May. This is followed by the first examination period of the spring semester.

The exact dates are determined by the Curriculum Committee and the university senate.
Each semester has two examination periods:

- Winter semester courses are examined during the period from January to February and again during the period from September (up to the third week of September).
- Spring semester courses are examined during the period of June and repeated during the period of September.

The January–February and September examination periods last three weeks, while the June examination period lasts two weeks according to the law, but all are usually extended to a longer period.
Each semester, before the start of the examination period, students have the right and obligation to evaluate their courses and instructors, with the aim of improving the quality of their studies. More information is available on the website of the Quality Assurance Unit (MODIP-AUTH http://qa.auth.gr) and on the website of their Faculty/School.

HOLIDAYS
During July and August, no courses or exams are held, and these months are considered summer holidays. The following are also included in the holidays:

- **Christmas holidays:** From 24 December to 7 January.
- **Carnival holidays:** Clean Monday and the following day.
- **Easter holidays:** From Holy Monday to Thomas Sunday.

PUBLIC HOLIDAYS AND BANK HOLIDAYS

- **26 October:** Feast of the patron saint of the city, Saint Demetrius. Liberation of Thessaloniki (national holiday).
- **28 October:** Anniversary of the "OXI" to Italian fascism (national holiday).
- **17 November:** Anniversary of the 1973 Polytechnic uprising.
- **30 January:** Feast of the Three Hierarchs (religious holiday).
- **25 March:** Anniversary of the 1821 revolution against Turkish rule (national holiday).
- **1 May:** May Day. – Day of class solidarity among workers (Labour holiday – strike).
- **Holy Spirit:** (Movable religious holiday).

6. Organisation of Studies of the Joint Undergraduate Program of Studies in English (IFLUP) – SUSTAINABLE AGRICULTURE AND FOOD SCIENCE

The School of Agriculture (in charge), in collaboration with the School of Chemistry of the Aristotle University of Thessaloniki, organises and operates an Joint Undergraduate Program of Studies in English (hereinafter referred to as J.E.U.P.S.) with a duration of five years, leading to the award of a single, uninterrupted postgraduate degree (Integrated Master) entitled "Sustainable Agriculture and Food Science" (in English: "Sustainable Agriculture and Food Science") and the degree corresponds **to level 7** of the National and European Qualifications Framework, in accordance with Article 47 of Law 4763/2020 (A' 254).

The subject of the Joint Undergraduate Program of Studies in English (JEUPS) Sustainable Agriculture and Food Science,: The Programme provides students with the necessary knowledge and skills to access modern agri-food systems. The programme provides students with the necessary knowledge and skills to access modern agri-food, agricultural, environmental and technological professions, as well as for any other professional or academic activity that requires a high level of scientific training in the field of Agricultural Sciences.

The aim of the programme is to provide a high level of agricultural education to an international audience through systematic familiarisation with the main subjects of sustainable agriculture and livestock farming, food science, agricultural economics, natural resource management and agricultural engineering. The programme aims to cultivate interdisciplinary thinking and problem-solving skills, develop skills in the application of innovative practices, strengthen critical thinking and scientific depth, promoting Greek agri-food excellence abroad, and generally strengthening the extroversion of the Schools participating in the JEUPS and Aristotle University of Thessaloniki.

Learning outcomes and qualifications. Upon successful completion of the JEUPS entitled Sustainable Agriculture and Food Science, students will have acquired:

- Comprehensive theoretical and practical knowledge in the key areas of Sustainable Agriculture (Plant Production, Animal Production, Agricultural Economics, Natural Resource Management and Agricultural Engineering) and Food Science.
- Skills in analysing and solving problems in complex agri-food systems.
- Digital and computational application skills in the agri-food sector, as developed in courses such as: Informatics, Computer Programming and Optimisation Methods, Digital Systems in Agriculture, Earth Observation and Geoinformation for Agrifood Systems.
- Ability to interpret and evaluate complex scientific and technological information , and ability to synthesise new knowledge for innovative applications in the agri-food sector.
- Understanding the social, economic and ethical dimensions of agri-food systems through courses such as: The Sociology of Food, Governance, Bioethics and Animal Welfare in Agri-Food Systems, Agricultural Economics, Agricultural Governance, as well as

developing leadership, entrepreneurship and social innovation skills (Entrepreneurship and Social Innovation in the Agri-Food Sector).

- Acquiring knowledge of integrated and sustainable management of agricultural production and animal husbandry, as well as knowledge of food science and technology.
- Ability to design and implement strategies for sustainable natural resource management and environmental protection in the agri-food sector.
- Acquisition of the appropriate level of knowledge to continue studies at **doctoral level**, as well as access, under certain conditions, to professional rights as an agronomist in Greece and abroad.

The programme provides students with the academic prerequisites for continuing their studies at doctoral level and the professional prerequisites for a career in fields that require documented agricultural knowledge, while the single and uninterrupted postgraduate degree (Integrated Master) awarded is equivalent to the 5-year Integrated Master degrees (Integrated Master) awarded by Greek-language programmes of the Agricultural Schools of Greek Universities and corresponding foreign universities.

6.1. Degree awarded by the Interdepartmental Postgraduate Programme

The JEUPSof the Schools of Agriculture and Chemistry of the Aristotle University of Thessaloniki awards a single, uninterrupted postgraduate degree (Integrated Master).

Successful completion of the programme corresponds to level seven (7) of the National and European Qualifications Framework, in accordance with the provisions of Article 47 of Law 4763/2020 (Government Gazette A' 254).

6.2. B.I.P.P.S. bodies

The bodies responsible for the organisation, administration and operation of the Joint Undergraduate Program of Studies in English are as follows:

1. The Senate of Aristotle University of Thessaloniki.
2. Program Steering Committee of the JEUPS (P.S.C.).
3. The Director of the JEUPS.
4. The Assemblies of the participating Schools (School of Agriculture and School of Chemistry).

More specifically:

1. **The Senate of the Institution** exercises the following powers:

- It approves the establishment of the JEUPS, following a recommendation by the assemblies of the participating Schools, as well as the amendment of the decision to establish the JEUPS, following a recommendation by the Curriculum Committee.
- It approves the Internal Regulations of the JEUPS, following a recommendation by the Schools Assembly, as well as any amendments thereto, following a recommendation by the Study Programme Committee.

- Establishes the Curriculum Committee of the JEUPS and appoints the Director of the JEUPS, following a recommendation by the School Assembly.
- It approves the abolition of the JEUPS, following a recommendation by the School Assembly.
- Exercises any other authority relating to academic, administrative, financial and organisational matters of the JEUPS, which are not specifically assigned to other bodies by this document.

2. The Curriculum Committee of the JEUPS consists of a total of seven (7) members of the Teaching and Research Staff (D.E.P.), and is composed of six (6) members of the Teaching and Research Staff (D.E.P.) of the School of Agriculture and one (1) member of the Teaching and Research Staff (D.E.P.) of the School of Chemistry. At least two (2) faculty members of the Committee must be Professors or Associate Professors. The Committee has a four-year term and is formed by decision of the University Senate, following a recommendation by the Assembly of the School of Agriculture for the six (6) members and the School of Chemistry for the one (1) member. The members of the Committee do not receive any compensation for the performance of their administrative duties. The Curriculum Committee of the JEUPS exercises the following powers:

- It proposes to the Senate the amendment of the decision establishing the JEUPS ., as well as any other matter related to its operation, for which the Senate is the competent body.
- It distributes the teaching work among the teachers of the JEUPS.
- It prepares the annual budget of the JEUPS.
- It approves all types of expenditure for the operation of the JEUPS.
- It verifies the successful completion of studies in order to award the title of the JEUPS.
- Appoints the Coordinator of the JEUPS.
- Exercises any other authority related to the organisation, administration and management of the JEUPS programme.

The Coordinator is a member of the teaching staff of the School of Agriculture or the School of Chemistry and works closely with the Programme Director and the Committee, undertaking coordination and organisational tasks under their supervision. The Coordinator exercises, indicatively, the following responsibilities, as assigned by the JEUPS Executive Committee:

- Monitors the smooth daily operation of the Programme and ensures the timely implementation of the decisions of the Committee and the Director.
- Organises the timetable and communication with teachers.
- Cooperates with the Secretariat on issues related to the operation of the Programme.
- Ensures that students are informed about the curriculum, assessment procedures, mobility, scholarship opportunities and any other academic or administrative issues.

- In coordination with the Programme Secretariat, drafts and submits regular reports to the Committee and the Director on the operation of the Programme.
- Represents the Programme in administrative and/or academic contacts with bodies within and outside the Aristotle University of Thessaloniki, following a relevant decision by the Committee or the Director.
- Exercises, upon authorisation by the Committee, any other powers assigned to the Director by these Regulations.

3. Director of the Joint Undergraduate Program of Studies in English. The Director is appointed by the Senate and is a member of the Curriculum Committee (CC) of the JEUPS, coming from the School of Agriculture. If the Head of the School of Agriculture is a member of the C.C. of the JEUPS, it is recommended that he/she be appointed as Director as a matter of priority. The Director exercises, indicatively, the following responsibilities:

- Chairs the Curriculum Committee and convenes its meetings.
- Makes recommendations to the Curriculum Committee and other bodies of the Higher Education Institution on matters relating to the effective operation of the JEUPS.
- Is the Scientific Director of the JEUPS, in accordance with Article 234 of Law 4957/2022.

6.3. Categories of Candidates for the JEUPS

Foreign candidates who are eligible to apply are:

a) Graduates of high schools or equivalent schools based abroad. Interested parties, provided they have completed the last two (2) years of high school or equivalent school in a foreign country, must submit a high school diploma or other equivalent secondary education qualification that entitles them to enroll in higher education institutions in the country in which they graduated.

b) Graduates of a recognised foreign school in other Member States of the European Union or third countries, **which is legally established and operates in Greece**, whose qualification entitles them to admission to higher education institutions located in the country whose curriculum is followed by the foreign school from which they graduated, provided that:

ba) they and their parents do not have Greek nationality and

(bb) they have attended at least the last two (2) years of high school in full-time education.

c) Students of Agriculture or corresponding Schools of higher education institutions abroad, who hold the certificate referred to in paragraph 1 of Article 314A of Law 4957/2022, in order to continue their studies in the corresponding semester and be awarded a degree by the JEUPS.

Foreign schools in Greece must be recognised as legally operating by the local Secondary Education Directorate.

The authenticity of the high school diploma and the candidate's detailed grades can be verified:

1. with an Apostille stamp, provided that the country of origin of the documents is a member of the Hague Apostille Convention,

2. with a notary's certification (notarial act),

3. with certification by the Ministry of Foreign Affairs and/or the Ministry of Education of the issuing country,

4. by submitting the leaving certificate and/or detailed transcript and simultaneously informing the foreign school by the interested party. The notification is accompanied by an official email from the foreign school, enabling the Programme Secretariat to verify the authenticity of the documents in question.

Proof of English language proficiency

Candidates must demonstrate proficiency in English at least at level B2, according to the Common European Framework of Reference for Languages (CEFR), in one of the following ways:

1. English as their mother tongue.

2. Possession of a language proficiency certificate of at least level B2 from a recognised examination body, in accordance with the applicable decisions of the Supreme Council for Personnel Selection (ASEP) or the Ministry of Education on recognised language proficiency certificates.

3. Degree from a School of Foreign Languages and Literature or a School of Foreign Languages, Translation and Interpreting in Greece, or an equivalent qualification from a recognised institution abroad.

4. Bachelor's/Master's/Doctorate degree from a recognised foreign university, provided that the programme is conducted entirely in English.

5. High school diploma, provided that the candidate has attended at least the last two (2) years of secondary education at a school where the official language of instruction is English.

6. A foreign language teaching certificate does not constitute proof of knowledge of that language, as it is necessary to submit the certified degree on the basis of which the certificate was issued, as well as an official translation of it, if required.

6.4. Number of Admissions, Selection Criteria and Required Documents

The **annual number of admissions** to the JEUPS is set **at a maximum of forty (40)** students, while the minimum number of students required for the JEUPS to operate is set at fifteen (15) students. Upon recommendation by the Programme Committee, decision by the Senate and publication in the Government Gazette, the minimum and maximum number of admissions may be changed for each cycle of the Programme.

The **selection** of admitted students is based on the candidates' CVs, following evaluation of their files and supporting documents by the Study Programme Committee and

the candidates' participation in the selection process. This includes an online interview conducted by members of the Committee, which assesses communication and reasoning skills, academic and personal readiness, and general understanding of issues in the agri-food sector. By decision of the Curriculum Committee, which is mentioned in the announcement, a test of knowledge in the English language may be conducted prior to the interview, in a form and on topics to be specified each time in the announcement. The relevant announcement and the corresponding required supporting documents are published on the programme's website.

Applications are submitted electronically throughout the year. Prospective students are invited to submit their applications, accompanied by the necessary supporting documents, to the Programme Secretariat in electronic form. The English language test and interviews are conducted on predetermined dates set by the Programme Committee, while the order of evaluation follows the chronological order of receipt of applications.

Candidates must submit the following **supporting documents**:

- Application form for participation in the JEUPS, available in electronic form on the Programme website.
- Photocopy of both sides **of the Police Identity Card** or **Passport.**
- High school **diploma** (with official translation into English).
- **Detailed transcript** of all courses taken in the final year of high school (with official translation into English).
- Certificate of **English language** proficiency at least at level **B2.**
- **Motivation letter** of up to five hundred (500) words, presenting the candidate's interest in sustainable agriculture and food science, their motivation for studying the programme, and their future goals.
- A **brief CV** including information on studies, distinctions, volunteer work or other activities related to the subject.

The above-described candidate selection criteria and supporting documents may be revised upon recommendation by the Programme Committee and approval by the Senate of Aristotle University of Thessaloniki.

In addition, the following optional academic criteria are taken into account in the evaluation of the candidate's file:

- Minimum overall high school diploma grade: **seventy per cent (70%) of the maximum grade** or equivalent.
- Possession of admission test certificates for higher education, such as:
  - *International Baccalaureate (IB):* at least **28/45**,
  - *SAT / ACT*: **SAT**: ≥ 1200/1600 **ACT**: ≥ 25/36
  - *TSA (Thinking Skills Assessment)*: ≥ 70/100 or raw score ≥ 28/50

Additional criteria are taken into account for the evaluation and selection of candidates, which are defined and may be revised upon recommendation of the Curriculum Committee and in accordance with the applicable legal framework.

The relevant original documents, if deemed necessary, may be requested from the candidate to be sent by post or submitted in person to the Programme Secretariat.

The **final selection process for candidates** to the Programme is carried out by the Curriculum Committee as follows: The Committee compiles a complete list of all candidates and, after the relevant checks, it rejects those who do not meet the minimum criteria set by law and the Programme and invites the shortlisted candidates who have submitted the required supporting documents to an interview.

After completion of the process (evaluation based on the supporting documents, the interview and the knowledge test (if applicable), the final list of successful candidates is drawn up.

The **final list of successful candidates** and any alternates is validated by the Programme Committee. The candidate selection process, the publication of results and the enrolment of successful candidates must be completed by 30 September of each academic year, subject to the filling of vacancies arising from students who have voluntarily withdrawn from the Programme by discontinuing their studies who voluntarily withdrew from the Programme by discontinuing their studies. These places are filled in order of priority from the list of runners-up compiled by the Study Programme Committee during the evaluation of applications.

In addition to the above, students of Agricultural Schools of higher education institutions abroad who hold a certificate of evaluation of periods of study which have been completed at a recognised higher education institution abroad (paragraph 1 of Article 314A of Law 4957/2022, as amended by Article 128 of Law 5094/2024), to the D.X.P.P.S. in order to continue their studies and be awarded the corresponding degree.

Students submit an expression of interest form with the required supporting documents to the Secretariat of the JEUPS in printed or electronic form, via the Electronic Registration Information System of the Ministry of Education, Religion and Sports.

Filling vacant positions

In the event of a student's withdrawal or expulsion, the Study Programme Committee may, by means of a specially justified decision, fill the vacant position in order to ensure the smooth operation of the Programme by maintaining a stable number of students in each year of study.

Candidates may be selected either from among those who submitted an application in the initial application cycle or through a separate public call.

Interested parties are requested to submit the following supporting documents:

- Copy of police ID or passport,
- High school diploma (original and official translation into English),
- Transcript of all final year high school grades (original and official translation into English),
- Detailed transcript from the school of origin,
- Official study programme of the school of origin for academic equivalence verification (in the cases of paragraph 1 of Article 314 A of Law 4957/2022),
- Proof of proficiency in English in accordance with the relevant section of Article 4 of these Regulations,

- Letter of interest and
- Curriculum vitae.

The Committee evaluates the candidates' files and may invite them to an interview before issuing its final decision.

Appeals against the results may be submitted within five (5) working days of the notification of the results, by written request to the Secretariat of the JEUPS.

The registration of successful candidates takes place following a relevant announcement by the Secretariat of the JEUPS within fifteen (15) days, with the submission of any necessary supporting documents. If a candidate does not enroll within the specified deadline by paying the relevant advance tuition fees, this will be considered a refusal to accept the place, which will be filled by the next candidate on the waiting list.

It should be noted that applications and the possible acceptance of candidates relate exclusively to the academic year specified in the relevant call for applications. There is no provision for provisional admission for subsequent academic semesters or years, regardless of the reason, including, but not limited to, military service or personal obligations. Candidates who wish to study in a subsequent year must reapply in the next cycle and the corresponding call for applications.

Exceptionally, the Study Programme Committee may, by reasoned decision, approve the postponement of the start of studies for one academic year, provided that there are serious reasons that are adequately documented by the candidate concerned. The decision to grant or deny the postponement is at the sole discretion of the Committee.

6.5. Duration and Conditions of Study at the JEUPS

The duration of study at the JEUPS leading to the award of a single, uninterrupted postgraduate degree entitled: Master Integrated in Sustainable Agriculture and Food Science (in Greek: Sustainable Agriculture and Food Science) is set at **ten (10) academic semesters** of full-time study.

The programme for each semester-long course lasts thirteen (13) weeks and consists of lectures, laboratory exercises, assignments, etc., depending on the requirements of the course and the choice of the respective instructor.

All courses are conducted **in person,** utilising the facilities of the School of Agriculture and the School of Chemistry of the Aristotle University of Thessaloniki. The use of **modern distance learning** methods is provided for in exceptional cases for the provision of teaching carried out with the participation of professors from foreign institutions or collaborating professors, in cases of force majeure or exceptional circumstances, where it is not possible to conduct the educational process in person or to use the infrastructure of the Schools of Agriculture and Chemistry for the conduct of educational, research and other activities, and for the organisation of in-depth courses and tutorial exercises, beyond the compulsory teaching hours per course. Distance learning courses are conducted using ICT, utilising the material and technical infrastructure of the Schools of Agriculture and Chemistry, as well as

the expertise and support of the Digital Governance Unit (M.Y.D.) of the Aristotle University of Thessaloniki.

The minimum duration of study at the JEUPS for the award of the degree is ten (10) academic semesters, while the maximum duration of study is defined as this period plus six (6) academic semesters.

After completing the maximum duration of study of sixteen semesters, and subject to the provisions in force at any given time in accordance with the applicable legislation on Higher Education Institutions, a decision to expel the student is issued by the competent body of the JEUPS.

Once enrolment has been completed and all the procedures required for the formal commencement of studies have been finalised, students who have not exceeded the maximum period of study specified in paragraph 1 may apply for a leave of absence for a period not exceeding a total of two (2) academic years. The right to suspend studies may be exercised once or in instalments for a period of at least one (1) academic semester, but the duration of the interruption may not exceed a total of two (2) years if granted in instalments. Student status is suspended during the period of interruption of studies and participation in any educational process is not permitted. The period of interruption of studies is not counted towards the maximum duration of normal studies, and upon resumption of studies, students return to normal study status with all the rights and obligations provided for in the Programme. The relevant procedure is initiated by a written request from the student concerned to the Secretariat of the JEUPS, accompanied by the necessary documents, as appropriate, and is evaluated by the Study Programme Committee.

For serious health reasons relating to the student or a first-degree blood relative, spouse or person with whom the student has entered into a civil partnership, an exception may be made to exceed the maximum duration of study by no more than one (1) year. This extension is approved by the Study Programme Committee, following a fully justified and adequately documented request by the student, and may not exceed two (2) consecutive academic semesters.

Part-time study is not available at the JEUPS

For issues regarding the re-examination of courses in outstanding courses or withdrawal for reasons such as:

a) insufficient progress by the student (as evidenced by lack of participation in the educational process: attendance, exams),

b) behaviour that violates academic ethics, and

c) the student's own request,

as decided by the Study Programme Committee

6.6. Student Rights and Obligations

Within the framework of the social policy of the School of Agriculture and the School of Chemistry, in collaboration with the Equal Access Unit of Aristotle University of Thessaloniki, full, equal and meaningful participation of all students with disabilities or

special educational needs in all educational, research and administrative activities of the School in general and the JEUPS in particular.

Access to the teaching and examination areas of the School of Agriculture and the School of Chemistry is facilitated by appropriate infrastructure, such as ramps, special bars and lifts. For students who, due to disability or learning difficulties, are unable to participate in written examinations, the option of an oral examination is provided, either in person in an accessible room or remotely via a digital teleconferencing platform.

Students enroll and participate in the JEUPS under the terms and conditions set out in these Regulations. Students in the programme have **all the rights**, benefits and facilities provided for students in the Greek-language programme, **except for** the right to free textbooks.

Students admitted to the JEUPS **are required to**:

1. Attend all courses of the Study Programme, regardless of whether they are conducted in person or, exceptionally, remotely, provided that the latter has been approved by the competent bodies of the Programme. Participation in courses, exercises, examinations, public lectures and other educational activities is compulsory. Students are entitled to an absence of up to thirty per cent (30%) of the total teaching hours of each course per semester. In the event of a serious and justified impediment, it is possible to make up for the teaching hours, after consultation with the lecturer and with the approval of the Programme Committee.

2. Submit the required assignments on time, if these are specified in the course by the instructor.

3. Declare any courses from previous years that have not been successfully completed at the beginning of each semester. Declarations are submitted electronically through the electronic secretarial service and are included in the student's individual file. A mandatory declaration is required in the final year for elective courses.

4. They must purchase or borrow the necessary textbooks, as recommended by the course coordinator, if deemed necessary.

5. They should regularly check the announcements of the Programme and the Secretariat by regularly checking their email.

6. Obtain an academic ID card through the relevant electronic service of the Ministry of Education, Religious Affairs and Sports.

7. Pay tuition fees on time before the 1st and 2nd semesters of each academic year, in accordance with the deadlines set.

8. They must have settled any financial or other outstanding issues with the Programme and the Foundation before their graduation. Otherwise, they will not be entitled to participate in the graduation ceremony.

9. In the case of a reciprocal scholarship, they must provide the required work, which may involve supporting the educational or research activities of the Programme, the library or other needs of the School.

10. Respect the decisions of the Programme's bodies and adhere to the rules of academic ethics.

Systematic or serious violation of the obligations arising from these Regulations, without sufficient and documented justification, may result in failure of a course or, in serious cases, exclusion from educational activities and/or expulsion of the student from the Programme, following a decision by the Programme Committee.

The same penalty may be imposed in cases of disciplinary offences that offend the academic community and the dignity of its members, such as sexist, racist, homophobic or transphobic behaviour, verbal or physical violence, inappropriate behaviour on university premises, as well as any action that is contrary to the principles of respect, equality and inclusion. Finally, the Committee reserves the right to refer relevant cases to the competent disciplinary bodies of the Institution or, if there are grounds for doing so, to forward them to the competent authorities of the legal system, in accordance with the applicable legislation.

The JEUPS provides the institution of the Academic Advisor. The role of the Academic Advisor is to advise students on the successful completion of their studies and, based on their individual goals, to offer guidance and solutions to any problems that arise and hinder the successful completion of their studies. The list of Academic Advisors will be announced by the Secretariat on the JEUPS website, along with their contact details. All lecturers are required to perform the duties of Academic Advisor, and the appointment is made after the registration of new students at the beginning of each academic year. New students should contact their assigned Academic Advisor immediately at the beginning of the winter semester of their year of admission to the JEUPS They are then encouraged to maintain at least one contact per month with their Academic Advisor. The Academic Advisor is committed to suggesting solutions in the event that a student encounters a problem related to the smooth progress of their studies and to immediately informing the E.P.S. and to respect personal data in accordance with the code of ethics.

6.7. Official Language of the Programme - Study Programme - Course Content - Assessment

English is the official language of the Programme.

The Joint Undergraduate Program of Studies in English (JEUPS) "Sustainable Agriculture and Food Science" offers a unified, full-time study programme lasting five (5) academic years, which is structured into ten (10) academic semesters. The programme comprises a total of fifty-five (55) courses, of which students are required to attend and successfully pass forty-five (45) courses, which they will select when registering for courses each semester, accumulating 270 credit units (ECTS) during the first 9 semesters of their studies. In the 10^{th} semester, students write a thesis worth 30 ECTS on a topic of their choice.

The programme adopts a flexible study model with no compulsory courses, in which all courses are elective. Each course is designed to have a workload corresponding to 6 ECTS credits, and students are required to register for five (5) courses at the beginning of each semester. These courses may be from the student's current semester of study or from previous semesters of the same period (winter or spring). In the flexible curriculum of the JEUPS ., students are not bound by formal compulsory modules, but by a well-structured and balanced framework of options. This model enhances learning autonomy, allows for the personalisation of studies and reflects the philosophy of contemporary higher education,

where students actively participate in shaping their educational path. Although the programme comprises a total of 55 courses, its structure ensures that students will choose 45, or approximately 80% of the programme. Thus, the programme maintains the functionality and coherence of a curriculum with a clear core of knowledge, as the choices are quite guided in practice. The programme design was based on the following principles:

- all courses are highly relevant to the programme of study,
- all cover critical knowledge and skills required for the professional and academic development of graduates,
- no course is peripheral or secondary.

In this way, regardless of individual choices, all students complete an equally comprehensive and balanced programme of study.

The option to choose courses from previous winter or spring semesters:

- allows students to tailor the programme to their own needs (e.g. workload, academic interests, mobility),
- ensures that no student is delayed due to restrictions on course availability,
- enhances learning continuity, as students can catch up on knowledge when they deem it appropriate.

Although all courses are elective:

- their distribution across semesters is balanced,
- the prerequisite knowledge has been incorporated into the natural sequence of courses,
- the gradual building of knowledge and skills is ensured through the progressive structure (basic – intermediate – advanced level).

Thus, while there are no formal "core courses," the structure itself functions as an indirect core.

Attendance at courses is compulsory, and absences exceeding thirty per cent (30%) of the teaching hours each semester are not permitted, unless there are documented reasons of force majeure.

The academic year is divided into two (2) semesters (winter and spring), each of which contains thirteen (13) weeks of teaching, with an examination period at the end of each semester. Successful completion of the programme for the award of the degree requires the accumulation of three hundred (300) ECTS credits.

All courses are taught in English. Interested students have the opportunity to enroll in the School of Modern Greek Language of the Aristotle University of Thessaloniki in order to learn Greek during the first three (3) years of their studies.

The programme does not include a compulsory internship.

The detailed curriculum is presented in Article 8 of the Programme's Internal Regulations.

6.7.1 Curriculum

Code	CURRICULUM | Courses	Hours/week	ECTS

1st Semester

SAFS

SAFS 101	Calculus for agriculture and food science	5	6
SAFS 102	General Chemistry	5	6
SAFS 103	Informatics	5	6
SAFS 104	Bioethics, Governance and Animal Welfare in Agri-Food Systems	5	6
SAFS 105	The sociology of food: cultural and social dimensions of Mediterranean Gastronomy	3	6
SAFS 106	Mediterranean Biodiversity, Climate Change and Circular Economy	4	6

2nd Semester

SAFS 201	Physics applied in the agrifood sector	5	6
SAFS 202	Statistics and Biometry	5	6
SAFS 203	Sustainable Field Crop Production	5	6
SAFS 204	Living Systems and Molecular Biology	5	6
SAFS 205	Food Chemistry (Prerequisite courses: SAFS 102)	5	6
SAFS 206	Agricultural Economics	3	6

3rd Semester

SAFS 301	Agrometeorology	5	6
SAFS 302	Computer Programming and Optimisation Methods	5	6
SAFS 303	Principles of Genetics	4	6
SAFS 304	Introduction to animal husbandry and farm management	5	6
SAFS 305	Food Processing and Preservation Technologies (Prerequisite courses: SAFS 205)	5	6
SAFS 306	Agricultural Governance: Policy Instruments and Sustainable Cooperative Models	5	6

4th Semester

SAFS 401	Food analysis (Prerequisite courses: SAFS 205)	5	6
SAFS 402	Soil Science	5	6
SAFS 403	General and Food Microbiology	5	6
SAFS 404	Plant Physiology (Prerequisite courses: SAFS 204)	5	6
SAFS 405	Biochemistry (Prerequisite courses: SAFS 204)	5	6

SAFS 406	Entrepreneurship and Social Innovation in the Agrifood Sector	5	6

5th Semester

SAFS 501	Digital Systems in Agriculture	5	6
SAFS 502	Food Biotechnology (Prerequisite courses: SAFS 205, 403)	5	6
SAFS 503	Plant Pathology	5	6
SAFS 504	Intelligent animal nutrition	5	6
SAFS 505	Principles of pesticides	5	6
SAFS 506	Agrifood Marketing, Consumer and Sustainability	5	6

6th Semester

SAFS 601	Viticulture	5	6
SAFS 602	Principles of modern fruit science	5	6
SAFS 603	New trends in Floriculture	5	6
SAFS 604	Water Resources and Irrigation Engineering	5	6
SAFS 605	Entomology applied in Agriculture	5	6
SAFS 606	Controlled Environment Systems (Livestock and Plants)	5	6

7th Semester

SAFS 701	Ecology	5	6
SAFS 702	Sustainable Oenology and Wine Production (Prerequisite courses: SAFS 205, 403)	5	6
SAFS 703	Food Engineering (Prerequisite courses: SAFS 305)	5	6
SAFS 704	Breeding & Plant Propagation (Prerequisite courses: SAFS 303)	5	6
SAFS 705	Physiology of reproduction of farm animals	5	6
SAFS 706	Nutrition and Metabolism with Mediterranean Diet Insights (Prerequisite courses: SAFS 205)	5	6
SAFS 707	Landscape architecture	5	6

8th Semester

SAFS 801	Vegetable crop production	5	6

SAFS 802	Apiculture and bee products	5	6
SAFS 803	Farm Management	5	6
SAFS 804	Earth Observation and Geoinformatics for Agrifood Systems	5	6
SAFS 805	Organic Agriculture (Prerequisite courses: SAFS 203)	5	6
SAFS 806	Sustainable aquaculture and fisheries	5	6
SAFS 807	Industrial Agro-Food Process Design and Economics	5	6

9th Semester

SAFS 901	Precision Agriculture and Livestock Farming (Prerequisite courses: SAFS 501, 804)	5	6
SAFS 902	Farm Accounting	5	6
SAFS 903	Digital and Predictive Food Microbiology & Quality Assurance Systems	5	6
SAFS 904	Renewable Energy Resources in Agriculture	5	6
SAFS 905	Mediterranean and Functional Foods (Prerequisite courses: SAFS 205, 305)	5	6

10th Semester

SAFS 1000	Diploma Thesis		30

6.7.2 Course Contents

[SAFS 101] – Differential and Integral Calculus for Agriculture and Food Science

Real numbers and algebraic expressions. Linear and nonlinear equations. Definition and types of functions (polynomial, rational, exponential, logarithmic, trigonometric functions). Graphical representation of functions and interpretation. Applications of functions in agricultural and biological problems. Sequences and series of numbers. Limit and continuity of a function. Practical interpretation of limits in applied problems. Elements of Differential Calculus: derivative of a function, rules and techniques of differentiation. Higher order derivatives. Applications of differential calculus (study of functions and graphical representation, rates of change, growth models and optimisation problems – maxima and minima). Applications of derivatives to agricultural and biological problems. Elements of Integral Calculus: indefinite integral, definite integral , fundamental theorem, rules and techniques of integration. Applications of integral calculus (area under curves, curve lengths, surfaces of revolution, cumulative quantities). Numerical integration (trapezoidal rule, Simpson's method). Applications of integrals to agricultural and biological problems. Elements of Differential Equations: dynamic systems, definition and order, ordinary differential equations, first-order differential equations, linear differential equations, homogeneous differential equations, equations of separated

variables. Applications of differential equations to agricultural and biological problems. Elements of Multivariable Calculus: functions of two variables, graphical representations of surfaces, curves and surfaces of equal height, partial derivatives. Applications of multivariable calculus to agricultural and biological problems. Elements of Linear Algebra: vectors and matrices, matrix operations, determinants and systems of linear equations. Applications of matrices in the analysis of agricultural data. Elements of Combinatorics: basic principles of counting, permutations, arrangements, combinations. Elements of Probability Theory: random experiments, definitions of probability, probability rules, conditional probability, Bayes' theorem. Mathematical Modelling in Agriculture (simple mathematical models, examples from crop development, population dynamics and resource optimisation).

[SAFS 102] – General Chemistry

Unit 1: Atomic Theory and Chemical Bonds: This unit covers the structure of atoms, the periodic table and chemical bonds (ionic and covalent).

Unit 2: Chemical Reactions: This unit covers stoichiometry, reaction rates, chemical equilibrium, and redox reactions. It also includes ionic equilibrium and acid-base equilibrium, pH calculations, and buffer solutions.

Unit 3: Thermodynamics and Kinetics: Introduction to the fundamental principles of chemical thermodynamics and kinetics, including enthalpy and free energy.

Unit 4: Properties of Matter: Introduction to the study of the properties of gases, liquids and solids, as well as solutions and intermolecular forces.

Unit 5: Acids and Bases: The material covers the chemistry of acids and bases, including ionic equilibrium.

Unit 6: Coordination Chemistry: Introduction to the basic concepts of coordination compounds, relevant to understanding how metals function in soil and biological systems.

Unit 7: Basic Analytical Chemistry: Training in laboratory techniques, sample preparation, gravimetric analysis, volumetric analysis (acid-base and redox titrations for determining solution concentration) and basic instrumental methods.

Unit 8: Introduction to Biomolecular Chemistry: The course covers the nomenclature of organic compounds, the structure and properties of basic organic compounds with an emphasis on amino acids, peptides, proteins, enzymes, carbohydrates and lipids.

[SAFS 103] – Information Technology

Unit 1: Introduction to Information Technology

- Role of information technology in agricultural science
- Basic concepts: data, information, systems
- ICT applications in agriculture

Unit 2: Computer Systems and Hardware

- Components of a computer (CPU, memory, storage, input/output devices)
- Operating systems
- Peripheral devices in agriculture (sensors, GPS receivers, mobile devices)

Unit 3: Software Tools for Agricultural Tasks

- Word processing and report preparation

• Basic principles of spreadsheets (data entry, formatting, formulas)
• Presentation software for academic and professional use
• Introduction to database concepts

Unit 4: Analysis with Spreadsheets in Agriculture
• Functions, formulas and lookup tables
• Sorting, filtering and validating data
• Graphs and visualisation techniques
• Application examples: budgets, yield calculations, farm data

Unit 5: Introduction to Data Management and Analysis
• Types of agricultural data
• Basic statistics using digital tools
• Data cleaning and organisation
• Simple automation (macros, scripts)

Unit 6: Computer Networks and the Internet
• Basic network principles (LAN, WAN, protocols)
• Cloud computing and online collaboration
• Email, communication tools and academic platforms
• Digital ethics and responsible online behaviour

Unit 7: Cybersecurity and Data Protection
• Threats, malware and safe browsing
• Password management and authentication
• Backup and data recovery strategies
• Personal data protection and basic principles of the GDPR (in relation to agricultural data)

Unit 8: Digital Technologies in Modern Agriculture
• Precision farming
• Remote sensing and imaging data
• Farm Management Information Systems (FMIS)
• Internet of Things (IoT) in agriculture

Unit 9: Laboratory Exercises and Case Studies
• Practical exercises with spreadsheets, GIS and online tools
• Digital solutions for farm planning and monitoring
• Small project integrating the skills of the course

[SAFS 104] – Bioethics, Governance and Well-being in Agri-Food Systems

1. Bioethics in agriculture: Ethical Governance Framework in Plant Production and Animal Husbandry.
2. From Farm to Market: Civil Society, Agricultural Cooperatives and Fair Food Supply Chains.
3. United Nations Sustainable Development Goals: A Systemic Approach to Food and Agriculture.

4. Global Food Governance and Market Transformations. International Organisations and Trade Ethics (NGOs, FAO, WTO).
5. European and National Legislation (directives) on Bioethics and Animal Welfare.
6. Applied Ethics and Bioethical Dilemmas in Modern Agriculture.
7. Bioethics, Public Trust and Social Acceptance of Agri-Food Systems.
8. Bioethics, Sustainability and Control in Agricultural and Livestock Businesses: Governance Tools for Ethical Decision-Making Management of Production Factors, Technology and Stakeholder Expectations.
9. Methods for Assessing the Welfare Index by Evaluating Ethical Standards. Integrating animal welfare assessments into farm management decisions to improve productivity, animal health and product quality.
10. Implementation of the protocol for the proper treatment of animals, particularly in intensive livestock farming units. Presentation of the five freedoms and the concept of the three Rs. An introduction to the various means animals use to send signals to each other and how these signals are influenced by the environment and social context.
11. Presentation of exogenous and endogenous stimuli that influence physiological, biochemical and other functional parameters which in turn determine the welfare of animals (especially farm animals). Different ethological patterns among different species. Behavioural grazing pattern. Maternal behaviour pattern. Social activities and behavioural reactions between males and females. Expected behaviour and behavioural patterns in captivity (red deer - Cervus elaphus -, wild boar - Sus scrofa - and brown bear - Ursus arctus).
12. Communication strategies for advising farmers, livestock breeders and stakeholders on the implementation of improvements in welfare and compliance with legislation.
13. Visits to livestock and animal husbandry units.

[SAFS 105] – The Sociology of Food: Cultural and Social Dimensions of Mediterranean Gastronomy

The course focuses on covering the relationship between food and society, examining issues such as production, distribution and consumption of food from sociological perspectives, as well as the transformation of agri-food systems to be more sustainable, resilient and equitable based on Mediterranean gastronomy rooted in cultural and ethical practices. Key content areas include how food is shaped by social factors such as class, gender and ethnicity, the impact of globalisation on food systems, especially in the Mediterranean, and the symbolic, cultural and political meanings of Mediterranean gastronomy. The course also analyses social issues related to food, such as inequality, sustainability and the rise of social movements such as fair trade, the slow food movement and urban agriculture.

Unit 1: (Week 1^{-2}) Food and Social Structure:

How social class, gender, race, ethnicity, age, and religion influence food choices and habits. The role of food in creating and reinforcing social inequalities. How food is used as an indicator of identity and social status. Critical analysis of alternative food movements, such as slow food, farm-to-table, and fair trade.

Unit 2: (Week 3 - Week 4) Food Production and Distribution:

The social and political dynamics of contemporary food systems, from farm to table. The sociology of labour in agriculture and food processing. Issues of food security, hunger and access, including the concept of "food deserts" and zero food miles. The impact of globalisation on food systems.

Unit 3: (Weeks$^{5-6}$) Food consumption and culture in the Mediterranean:

The symbolic meanings of food, including rituals, traditions and celebrations. The role of food in family and community life. The sociology of taste and its relationship to social class. The transformative role of agritourism and Mediterranean gastronomy.

Unit 4: (^{7th}-^{11th}week): EU geographical indication system (PGI, PDO, etc.) food and wine - linked to cultural gastronomy and the Mediterranean region:

Cultural heritage: PDO and PGI products linked to generations of history, tradition and specific production methods (local and indigenous varieties).

Regional identity: These designations reinforce the unique identity of Mediterranean regions by highlighting their specific products, such as Greek feta cheese or Italian parmesan.

Link between food and place: The systems link food to the land, climate and local flora and fauna, which is a cornerstone of the Mediterranean diet philosophy. For example, the unique flavour of Greek feta cheese is directly linked to the diverse local flora that sheep and goats graze on.

Sustainable practices: The PDO/PGI system encourages sustainable agriculture and protects biodiversity, as seen in initiatives promoting ecological areas and organic farming in Mediterranean regions.

Economic value: By protecting these products, the EU system provides economic benefits to farmers and rural communities, while guiding consumers towards authentic products.

Unit 5: (Weeks 12-13) Presentation of work

[SAFS 106] Mediterranean Biodiversity, Climate Change and Circular Economy

1: Biodiversity, evolution, local adaptation and conservation biology

2. Invasive, endemic and endangered species in the Mediterranean. IUCN Red List of Threatened Species

3: The impact of climate change on living organisms - thermal stress and reduced productivity

4: Interactions of the Mediterranean environment, ecological management and sustainability

5: Basic principles of the circular economy

6: Main cultivated, farmed and cultivated species in the Mediterranean - benefits and risks

7: Stress, Oxygen - Metabolism - Energy, Homeostasis

8: Imports and environmental risks

9: Reuse and management of waste and by-products

10: Sustainability, risks and management of Mediterranean ecosystems

11: Natura 2000 network, Ramsar Convention and protected area regulations

12: Introduction to Mediterranean production systems

13: Assignment - comparative analysis of Mediterranean systems

[SAFS 201] – Applied Physics in the Agri-Food Sector

1. Soil structure and phases
2. Soil water: Seepage, potential, movement
3. Soil air, gas exchange and thermal properties of soil
4. Water transport in plants and biophysics of wood

5. Light, Radiation and the Physics of Photosynthesis
6 Mechanical Properties of Plants and Biomechanics
7. Basic Physicochemical Principles in Food Systems
8 Thermodynamics of Food Systems
9. Biopolymers
10. Water in Food – Activity, Phase Transitions
11. Reaction Kinetics and Food Shelf Life Prediction
12. Colloids and Interfaces in Agri-Food Systems
13. Food Rheology and Texture

[SAFS 202] – Statistics and Biometrics

About Data:
Data, Information, Knowledge, variables, probability distributions, variability, population, sample, census and sample surveys, sampling methods (random and non-random), sample representativeness, sample size
Principles of Scientific Research:
Experimental studies. Correlational studies. Types of research hypotheses. Types of variables (nominal, ordinal, interval, ratio, binary with 0/1 coding, continuous, discrete).
Descriptive Statistics: Absolute and relative frequencies, cumulative, absolute and relative frequencies, variance and standard error of proportions, minimum value, maximum value, range, mean, median, mode, prevailing value,variability – variance – dispersion,·standard deviation,·coefficient of variability (CV),·standard error of the mean·quartiles (Q1=Q25, Q2=Q50, Q3=Q75),·interquartile range,·semi-interquartile range. Weighted means,·harmonic and geometric mean ( ). Data transformations (logarithmic, z-scores). Coefficients of asymmetry and kurtosis.
Presentation of Results: Frequency tables or other statistical indicators (simple and complex). Diagrams (bar charts, line charts, box plots, histograms, scatter plots), simple and comparative.
Probability Theory: The concept of probability; set theory; combinations, permutations, arrangements and other tools; estimation and calculation of probabilities; laws and theorems; probability algebra; probability distributions; random variables (types of variables, expectation – expected value).
Theoretical Distributions: For discrete random variables: Bernoulli, Binomial, Poisson, Polynomial.
For continuous random variables: Normal, Standard Normal, Uniform, Exponential, Log-Normal.
Statistical or Empirical Distributions: Chi-square distribution, t-distribution, F-distribution. Determination of critical/theoretical values.
Confidence intervals: For the population mean, for the population proportion, for population variability/variance.
For the difference between the means of two populations (3 cases: two for independent samples, one for dependent/paired samples). For the difference between two population proportions (independent samples).
For the ratio of two population variances/volatilities (independent samples).
Assumptions and conditions. Calculation of the minimum required sample size.
Hypothesis testing (statistical tests): For the population mean, for the population proportion, for the population variance/variance. For the difference between the means of two populations (3 cases: 2 for independent samples, 1 for dependent samples). For the difference between two population

proportions (2 cases: 1 for independent samples, 1 for dependent or correlated samples). For the ratio of two population variances/variabilities (independent samples).
Chi-square test of independence, chi-square test of homogeneity, chi-square test of goodness of fit. Assumptions and conditions. Type I error, Type II error, Type 0 or Type II½ error, statistical power.
Investigating the correlation between two variables: For categorical variables: χ^2 test, tables of absolute and relative frequency correlations, correlation coefficients (Cramér's V, Pearson's φ). For quantitative variables: scatter plots, correlation coefficients (Pearson, Spearman). Simple linear regression. Assumptions and prerequisites.
Analysis of variance (ANOVA): One-way ANOVA. Two-way ANOVA. ANOVA table. Multiple comparisons of means. Assumptions and conditions.
Non-parametric tests: Mann–Whitney test, Wilcoxon test, Kruskal–Wallis test. Assumptions and conditions.
Experimental Designs / Conducting Experiments: Introduction to agricultural experimental research. Purpose of agricultural experimental research. Field experiments, greenhouse experiments, laboratory experiments. Randomisation, replicates, formation of experimental groups, experimental units and observation units. Methodology for setting up agricultural experiments. Introduction to the analysis of variability. Statistical significance tests. Experimental error. Fully randomised design. Comparisons of means. Complete groups in free arrangement. Latin square design. Factorial experiments. Main effects and interactions of factors. Introduction to linear regression. Introduction to regression analysis. Data transformations. Examples and applications. Demonstration of statistical software. Practical exercise in field experiment design.

[SAFS 203] – Sustainable Production of Field Crops

1. Introduction (Agriculture as an art and science, agriculture and population nutrition, the origin of cultivated plants, classification of cultivated plants according to various criteria)
2. Structure and function of field crops
3. Environment and plant growth – Climate (Solar radiation, Temperature, Rainfall and other precipitation, Wind, Light, Evapotranspiration, Photoperiod, The agricultural climate of Greece and the distribution of crops)
4. Environment and plant growth – Soil, weeds and biotic factors.
5. Growth, development and yield of crops
6. Crop rotation
7. Soil cultivation
8. Plant nutrition – fertilisation
9. Seed and sowing
10. Cropping systems (monoculture, intercropping, conventional agriculture, sustainable agriculture)
11. Cultivation systems (integrated management, organic farming, precision farming, new trends in agriculture, code of good agricultural practice, environmental indicators for the implementation of the code of good agricultural practice)
12. Summary presentation of the main crops of interest to Greece. Their products and quality.
13. Summary presentation of alternative crops such as aromatic and medicinal plants and energy crops of interest to Greece. Their products and quality.

Workshops
1. Identification of field crop seeds

2. Identification of field crops at different stages of development.
3. Seed germination, quality characteristics used in seed testing and fertilisers.
4. Identification of winter and spring weeds.

[SAFS 204] – Systems Biology and Molecular Biology

Introduction to Biology.

1. Introduction to Biology.
2. Biological macromolecules (carbohydrates, lipids, proteins, nucleic acids).
3. Cellular Structure and Function.
4. Energy and Metabolism.
5. Membrane Dynamics & Cellular Communication.
6. Cell Cycle & Cell Division.
7. DNA Structure & Gene Expression.
8. DNA Mutations, Repair Mechanisms, Transposons and DNA Polymorphisms.
9. Biotechnology & Genomics.
10. Genomic analysis, -omics technologies and bioinformatics.
11. Introduction to Evolution.
12. Diversity of Life: Microorganisms.
13. Diversity of life: Plants.
14. Diversity of life: Animals.
15. Molecular Cytogenetics.
16. Genetic modification & GMO organisms.
17. Genome editing technology.

Laboratory exercises:

Scientific method & microscopy, pipette, spectrophotometry, gel electrophoresis.

Properties of water.

1. Enzymes and reaction rates.
2. DNA extraction & PCR.
3. Gene expression analysis (RT-qPCR or reporter assays).
4. Bacterial transformation or CRISPR-based editing.
5. Protein purification & enzyme kinetics.
6. Bioinformatics: genome annotation & sequence analysis.
7. Systems biology: network modelling in Python or MATLAB.

[SAFS 205] – Food Chemistry

1. Water in food systems (structure and properties, water activity)
2. Proteins (amino acid/protein structure, denaturation, functional properties)
3. Lipids (structure and classification, lipid oxidation mechanisms)
4. Carbohydrates (mono-, disaccharides, sweeteners, dietary fibre, chemical reactions during processing)
5. Vitamins and minerals (water-soluble and fat-soluble vitamins, essential minerals and trace elements, bioavailability)
6. Colourants (chemical structure, stability during heating, pH change and storage)

7. Flavourings
8. Food additives (preservatives, stabilisers, emulsifiers)

[SAFS 206] – Agricultural Economics

Introduction to Agricultural Economics. Basic concepts and principles of economic production. Structure and current trends in agriculture in Greece, the EU and worldwide. Factors of agricultural production. Production costs, processing costs and economic results. Agricultural production and prices. Dependence of agriculture on natural resources. Agricultural product markets and market structure. Alternative agri-food chains. Competition issues. The role of agricultural cooperatives in empowering small farmers in the agri-food chain.

[SAFS 301] – Agricultural Meteorology

Structure and physical properties of the atmosphere. Thermodynamics of the atmosphere. Satellite data. Temperature, wind, hygrometric parameters, solar and terrestrial radiation. Soil temperature. Soil heat flow. Energy balance. Precipitation. Meteorological and climatic stations and instruments. Analysis of meteorological data. Evaporation, transpiration and evapotranspiration. Climate. Climate classification. Climate zones of the Earth. The climate of Greece. Microclimate. Effect of climate on plants and animals. Climate change and its impact on agriculture. Bioclimatic indices (heat index, aridity index). Protection from frost. Crop yield forecasting using meteorological data.

[SAFS 302] – Computer Programming and Optimisation Methods

Introduction to the programming process. Algorithms, Flowcharts and Pseudocode. Introduction to the MATLAB programming environment. Data types and operators. Built-in functions. Vectors and matrices. Input/output data files, branching and repetition structures. M-files (functions, scripts). Graphical representation of results. Introduction to Optimisation Methods. Linear Programming. Metaheuristic and evolutionary algorithms. Application examples.

[SAFS 303] – Principles of Genetic Science

1. Introduction to the science of genetics.
2. Knowledge about genetic material, its properties and inheritance is presented. Genetic control in cell functions, the genetic code and gene expression in relation to the environment are analysed.
3. The principles of Mendelian genetics, types of genes, the action of alleles and the chromosomal basis of heredity are presented.
4. The importance of cell division and the mitotic cell cycle are analysed. Emphasis is placed on the importance of mitosis as a biological phenomenon and its role in the development and differentiation of somatic cells.
5. Meiosis as a mechanism for maintaining genetic variability and stability through gametogenesis and recombination is described and analysed in comparison with mitotic cell division.

6. The concept of linked genes, gene mapping methods, the creation of genetic maps and their use are analysed.
7. The most important categories of mutations are presented, while the concepts of male sterility, extrachromosomal inheritance and their consequences for plant organisms are analysed.
8. Extensions of Mendelian genetic analysis with applications to plant and animal organisms.
9. Molecular genetics and the use of basic molecular markers. The history, application and significance of PCR, genetic databases.
10. Population genetics, Hardy-Weinberg law, determination of allele and genotype frequencies in a population.
11. Introduction to quantitative genetics, gene-environment interaction, inheritance of complex traits.
12. Sustainability and conservation of local genetic resources, local plant varieties, indigenous animal breeds, endangered species.

[SAFS 304] – Introduction to animal husbandry and livestock farm management

1. Introduction to animal husbandry and livestock farming systems
2. Basic concepts of farm animal development and productivity
3. Rational management of livestock farms
4. Critical control points in ruminant farming (cattle – sheep – goats)
5. Critical control points in monogastric farming (poultry farming – pig farming)
6. Farm animal breeds – Ruminants
7. Farm animal breeds – Monogastric animals
8. Recording of production characteristics (milk, eggs, meat)
9. Livestock farming, environment & environmental footprint
10. Management and conservation of genetic resources & indigenous breeds
11. Economic analysis of livestock farms
12. Innovation in livestock farms
13. Case Study

[SAFS 305] – Principles of Food Processing and Preservation

1. Basic principles of food processing
2. Thermal processes: pasteurisation, sterilisation, blanching, heat treatment inside/outside packaging
3. Non-thermal (new) technologies: High Pressure Hydrostatic Processing, Pulsed Electric Fields, Ultraviolet Radiation, Cold Plasma
4. Cooling – freezing
5. Dehydration, drying, concentration
6. Fermentation and biopreservation
7. Chemical and physical preservation methods
8. Packaging systems: Modified Atmosphere Packaging, Active Packaging, Smart Packaging
9. Food preparation technologies (dairy products, beverages, baked goods, ready meals)
10. Production process flow charts

[SAFS 306] – Agricultural Governance: Policy Instruments and Sustainable Cooperative Models

The course examines how governance is shaped and implemented in the agricultural sector, focusing on the policy tools used by states and international organisations to regulate, strengthen and promote sustainable agricultural production. At the same time, it analyses contemporary models of cooperation and cooperative organisation, exploring how collective action and participatory management can strengthen the resilience, innovation and socio-economic cohesion of rural communities. The course combines theoretical approaches with practical examples and case studies, preparing students to evaluate and design effective policies and sustainable cooperation structures.

[SAFS 401] – Food Analysis

This course offers an engaging and comprehensive exploration of modern food analysis, focusing on understanding and evaluating the chemical composition of foods and beverages. Students will gain practical experience in applying analytical techniques—including chemical, biochemical, physicochemical, and physical methods—to measure nutrients, bioactive compounds, and compounds of health interest. Advanced -omics approaches, such as metabolomics, proteomics, and lipidomics, will be introduced to provide a deeper understanding of food substrates at the molecular level.

Through practical laboratory exercises, students will analyse real food and beverage samples, investigating their nutritional value, quality, authenticity and the presence of components of health interest (contaminants, residues, allergens and additives). Organoleptic evaluation will be combined with instrumental methods to provide a holistic picture of food characteristics. The course also familiarises students with relevant food legislation and standards, enabling them to assess whether products meet quality and authenticity regulations. Students will develop key professional skills, including data interpretation, critical thinking, problem solving and scientific communication, through report writing and oral presentations. By bridging theory with practice and introducing classical and modern analytical tools, the course prepares students for careers in food science, research, quality assurance, and the food industry, while fostering creativity, innovation, and a forward-thinking approach to addressing food-related challenges.

[SAFS 402] – Soil Science

1. Origin and formation of soils (rocks, minerals, physical and chemical weathering, soil formation factors), soil profile, main components of soils.
2 Organic matter in soils.
3. Chemical-biochemical properties.
4. Clay minerals, ion exchange.
5. Soil microorganisms, fauna-flora.
6. Acidic, saline and sodic soils.

7. Physical properties (grain size distribution, aggregation-dispersion, structure, aeration, temperature).
8. Soil water (seepage-potential-movement).
9. Principles of soil classification and mapping.
10. Soil fertility (chemistry, availability, nutrient uptake).
11. Soil-plant interaction.
12. Soil as an element of the environment.
13. Soil management (conservation-degradation-improvement of physical, chemical-biochemical properties and fertility, erosion, current management trends).

[SAFS 403] – General Microbiology and Food Microbiology

This course introduces students to the fundamental principles of microbiology, with an emphasis on microorganisms that are important to agriculture and food. It covers microbial cell biology, genetics, diversity, growth, metabolism, ecological roles, and interactions of microorganisms with food environments. Students will study spoilage, pathogenic, and beneficial microorganisms and acquire basic skills in their enumeration, detection, and safe laboratory handling.

[SAFS 404] – Plant Physiology

1. Introductory concepts: Phylogenetics and plant classification.
2. Principles of cell function, holism and applications, homeostatic mechanisms.
3. Photosynthesis: Light reactions, the role of pigments.
4. CO2 reactions in photosynthesis. Photorespiration. C3, C4, CAM and intermediate photosynthetic cycles (alternative metabolic pathways).
5. Ecology of photosynthesis and plant metabolism:
6 Respiration.
7. Nitrogen: Nitrogen metabolism and fixation.
8. Ionic relationships: Inorganic nutrition.
9. Water relations: Water potential, transport pathways, transport mechanisms, water.
10. Signals-Signal Transmission.
11. Signals from sunlight-photoreceptors.
12. Development: Plant hormones. Biomolecules with hormonal activity.
13. Secondary metabolites: Introductory concepts, role and metabolism.

Laboratories
1. Determination of chlorophyll content using a portable chlorophyll meter. Photometric determination of chlorophyll a and b in leaves.
2. Photosynthesis I: Determination of photosynthetic efficiency by measuring chlorophyll fluorescence (in leaves adapted to darkness and light). Light response curves.
3. Photosynthesis II: Carbon assimilation - measurement of gas exchange and determination of net photosynthesis.
4. Water relations - transpiration, measurement of stomatal conductance.
5. Determination of leaf area index non-destructively in the field and destructively using a scanner in the laboratory - link to productivity.

[SAFS 405] – Biochemistry

Life on earth. Amino acids, polypeptide chains and proteins. The biological role of proteins: enzymes and haemoproteins. Enzyme inhibitors and their practical use. The incorporation of nitrogen into organic matter and the synthesis of amino acids. Amino acids as precursor molecules of other substances of practical interest. The synthesis of proteins: transcription, translation and their control. DNA metabolism: replication and mutations. Introduction to energy metabolism: redox reactions and the role of coenzymes, prosthetic groups and nutrients. The Krebs cycle, oxidative phosphorylation and photophosphorylation. Energy metabolism in bacteria. Oxygen metabolism and antioxidants. Carbohydrates: degradation under aerobic and anaerobic conditions. Carbohydrate synthesis in photosynthetic organisms. The pentose phosphate cycle. Structural lipids and membranes and lipid peroxidation. Lipid metabolism (synthesis and degradation).

[SAFS 406] Entrepreneurship and Social Innovation in the Agri-Food Sector

This course examines how socially oriented business mechanisms and innovation processes are transforming agri-food systems in response to sustainability imperatives, community needs, and socio-environmental challenges. It encourages an entrepreneurial mindset, enabling students to evaluate opportunities that create both economic and social value and to design solutions that promote inclusion, resilience, and sustainable development in the agri-food sector. The course deals with value recognition in complex socio-technical systems, with an emphasis on community participation, participatory innovation and inclusive governance models. Students learn to develop business models that incorporate principles of social innovation, digital technologies and sustainable practices. Particular attention is paid to understanding the role of organisational and community innovation in promoting rural and regional development. It further explores the transition from socially oriented concepts to sustainable social impact enterprises, emphasising hypothesis testing, feedback from stakeholders and the community, impact validation, and the alignment of social missions with market conditions and sustainability goals. The course focuses on strategies for evaluating social innovation pathways, designing impactful products and services, and adapting business solutions to environments characterised by economic, environmental, and social interdependencies. Through these elements, the course enhances decision-making under conditions of uncertainty, deepens understanding of rural innovation ecosystems, and equips participants with skills that support the emergence of inclusive, economically and socially sustainable and resilient agri-food businesses and cooperatives.

[SAFS 501] – Digital Systems in Agriculture

Module 1 – Fundamentals of Digital Agriculture

- Introduction to Digital Systems in Agriculture
- Digital workflows and system architectures
- Data standards and interoperability

Module 2 – Sensors, IoT and Data Collection

Module 3 – Robotics, Machinery and Automation

- Aerial and ground robotic platforms
- Digital Systems in Agricultural Machinery
  – Electronic Control Units (ECU), CAN-bus, ISOBUS
  – Sensor integration, telemetry and machine data streams
  – Automation and guidance systems (automatic GNSS/RTK steering)
  – Variable rate technologies and smart tools
  – Telematics, remote diagnostics and predictive maintenance
- Automation and control systems
- Computerised Environment for Agriculture (CEA)
  – Environmental monitoring
  – (Micro-/) Climate control and automated control loops (temperature, humidity, CO_2, irrigation, lighting)

Module 4 – Data Analysis and Intelligent Systems

- Aerial and Ground-based Robotic Technologies in Agriculture
- Introduction to Big Data and agriculture data sets
- Machine learning and artificial intelligence tools in agricultural applications
- Digital twins for simulation and predictive modelling
- High-Performance Computing (HPC) for large-scale models, simulations and training in Artificial Intelligence

Unit 5 – Platforms, Software & Decision Support

- Blockchain and Traceability
- Digital systems in post-harvest management
- Cybersecurity risks and best practices in agricultural data management

Module 6 – Technology Adoption and Impact

- Key factors influencing the adoption and practical use of digital tools in agriculture
- Small-scale applications and usability, reliability and maintainability in real field conditions
- Practical implications of developing digital tools for farmers, operators and agricultural advisors

[SAFS 502] – Food Biotechnology

The course provides a systematic and documented introduction to modern food biotechnology, with a primary focus on the utilisation of microorganisms and, to a lesser extent, plant and animal cells for the production of food and biogenic products related to the food sector. Particular emphasis is given to the principles of selection, maintenance and genetic improvement of microorganisms, as well as to the cultivation of plant and animal cells and the basic strategies and methods of fermentation applied on a laboratory and industrial scale.

The course content includes the design, operation and control of different types of bioreactors, with the aim of understanding the parameters that influence the growth of microorganisms, microbial metabolism and product formation. Through a combination of theoretical teaching and laboratory exercises, students gain knowledge and experience in the use of basic biotechnological tools and laboratory techniques related to microbial and enzymatic processes.

Modern analytical and experimental approaches to the cultivation, monitoring and characterisation of microbial cultures are presented, allowing for the quantitative evaluation of growth, metabolism and the production of biotechnological products. Particular emphasis is given

to the potential industrial exploitation of microorganisms for the production of high added-value products, such as fermented foods, single-cell protein, mycoprotein, organic acids, polysaccharides, pigments, vitamins, microbial lipids and other compounds resulting from fermentation processes.
In addition, the course examines precision fermentation as an emerging technological platform for the targeted and highly efficient production of techno- and biofunctional food ingredients, as well as the role of microorganisms as starter cultures, probiotics and their bioactive metabolic products (postbiotics) in the formation of fermented foods with health benefits.
Finally, issues of management, processing and utilisation of agro-industrial residues and food industry waste through biotechnological and physicochemical processes are analysed, within the framework of the principles of biorefining and the circular bioeconomy. Through the integrated connection of theoretical concepts and practical applications, the course equips students with the necessary knowledge and skills for the application of cell-based technologies, analyse bioprocess data and understand the opportunities and challenges associated with the industrial production of biotechnological food products, providing a strong scientific background for further academic or professional careers in the field of food biotechnology and bioprocesses.

[SAFS 503] – Plant Pathology

Module 1: Introduction to Plant Pathology
Description: Concept of disease, biotic and abiotic causes of disease
Unit 2: Fungi as plant pathogens
Description: Morphology – physiology – reproduction of fungi, classification of fungi
Unit 3: Prokaryotic microorganisms as plant pathogens
Description: morphology – reproduction – classification of prokaryotic plant pathogens
Unit 4: Viruses as plant pathogens
Description: Morphology of viruses – Classification – Diagnosis
Unit 5: Viruses as plant pathogens
Description: Plant infection and reproduction/movement in plants. Virus epidemiology and control

Unit 6: Parasitism and disease development
Description: Parasitism and pathogenicity, range of pathogen hosts, disease development in plants
Unit 7: Parasitism and disease development
Description: Disease cycle, correlation between disease cycle and epidemic
Unit 8: Pathogenesis mechanisms
Description: Mechanical forces, chemical weapons, enzymes and toxins of pathogens
Unit 9: Plant defence mechanisms
Description: Histological and biochemical mechanisms of passive plant defence, histological and biochemical mechanisms of active defence, immune signal transmission
Unit 10: Epidemiology of plant diseases
Description: Epidemic data, methods of disease measurement, epidemic development patterns
Unit 11: Environmental effects on disease development
Description: Effect of temperature, humidity, wind, light, soil pH and soil structure on disease development
Unit 12: Plant disease control

Description: Phytosanitary control measures, cultivation measures, biological control, biological disease control mechanisms, resistant varieties

Unit 13: Plant disease control

Description: Chemical disease control, classification of fungicides based on their mechanism of action and mobility in plants, fungicide resistance (selection of resistant strains, resistance mechanisms and resistance management), Plant defence inducers in disease control.

[SAFS 504] – Intelligent nutrition of farm animals

1. Introduction to farm animal nutrition and the evolution towards smart nutrition.
2. Nutrients, metabolism and requirements of productive animals.
3. Fundamental concepts of smart and digitally supported nutrition.
4. Methods of collecting nutritional data: basic sensors and monitoring tools.
5. Smart feeding systems: automatic feeders, feed intake recording, group management.
6. Feed analysis using modern techniques (NIRS, quality control tools).
7. Use of software for designing balanced and economical diets.
8. Basic principles of artificial intelligence and its introductory applications in nutrition.
9. Applications of computer vision and intelligence tools for assessing physical condition and health.
10. Nutrition and bioactive plant compounds in smart nutrition strategies.
11. Sustainability, welfare and emission reduction in the context of smart nutrition.
12. Examples of applications in cattle, sheep, goats, pigs and poultry.
13. Preparation of a case study and development of a small applied project in the field of smart nutrition for farm animals.

[SAFS 505] – Principles of Agricultural Pharmacology

Unit 1: History of chemical plant protection and the role of agricultural pesticides

Description: Evolution of agricultural pesticides, agricultural pesticides and principles of integrated plant protection

Unit 2: Agricultural pesticides and standardisation technology

Description: Formulation of plant protection products, determination of physicochemical properties, stability of agricultural pesticide formulations

Unit 3: Label information

Description: Legal use of agricultural pesticides, professional use, label content, digital label, requirements

Section 4: Legislation and regulations

Description: Approval/registration of agricultural pesticides in the EU and Greece, the role of assessment bodies, data requirements

Unit 5: Ecotoxicology and human health

Description: Risk/hazard to humans, non-target organisms and the environment

Module 6: Environmental fate of agricultural pesticides

Description: Adsorption, degradation, leaching, evaporation, surface runoff, spray drift, groundwater contamination

Unit 7: Low-risk agricultural pesticides and European legislation

Description: Categories of low-risk agricultural pesticides, specific characteristics of low-risk agricultural pesticides, new approaches to pesticide risk assessment, pesticide approval in the EU, problem formulation and qualitative risk assessment

Module 8: Pesticide residues and decontamination techniques

Description: Pesticide residues in food and feed, environmental fate of pesticides, diffuse and point source pollution, bioremediation and phytoremediation technologies, advanced analytical techniques

Unit 9: Agricultural pesticides and means of application

Description: Agricultural pesticide application equipment and calibration

Module 10: Main chemical classes of insecticides and resistance management

Description: Insecticide categories, classification, mode of action

Module 11: Main chemical classes of herbicides and resistance management

Description: Categories of herbicides, classification, mode of action

Unit 12: Main chemical classes of fungicides and resistance management

Description: Categories of fungicides, classification, mode of action

Unit 13: Sampling and analysis of agricultural pesticides

Description: Sampling protocols, extraction techniques, clean-up, chromatographic analytical equipment.

[SAFS 506] – Agri-food Marketing, Consumer and Sustainability.

Introduction and analysis of the marketing and market structures of agricultural products and food. Strategic marketing, planning, development of marketing strategies and marketing mix (product, price, place, promotion). Consumer purchasing behaviour, demand and the role of sustainability, authenticity and convenience ( ). Sustainability and business models, analysis of the environmental impact of food production, food waste and ESG (Environmental, Social, and Governance) strategies.
International marketing, international dilemmas and international marketing plans. Product naming, decision-making and strategy, product naming and positioning. Digital technologies such as precision farming and blockchain, analysis and innovation tools.

[SAFS 601] – Viticulture

Introduction, botanical origin, geographical distribution and systematic classification of the vine. Morphology, anatomy, physiological processes and annual biological cycle. Growth and development of the grape, biosynthesis and development of its metabolites (sugars, organic acids, phenolic compounds, nitrogenous compounds, aromatic compounds) during ripening. Harvesting. Ecology of the vine. The concept of *terroir*. Mass and clonal selection and improvement. Propagation of the vine. Establishment of a vineyard. Training systems, winter pruning and summer canopy management techniques. Basic principles of viticulture. The genus *Vitis*. The main varieties and rootstocks. Basic principles of ampelography.

[SAFS 602] – Arboriculture

Unit 1: Introduction to Arboriculture
Description: Recent developments in arboriculture, production in the Mediterranean, parts of a fruit tree, terminology related to flowering, fruit set, etc.

Unit 2: Types of fruit trees
Description: Arboricultural classification of fruit trees, evergreen and deciduous fruit trees, species cultivated in the Mediterranean.

Unit 3: The effect of climatic factors on the physiology of fruit trees.
Description: Climatic factors affecting the above-ground and below-ground parts of the tree, extreme weather events and their impact on orchards, dormancy.

Unit 4: Frost and the physiology of fruit trees
Description: Types of frost, critical stages of tree development during frost, frost protection in an orchard.

Unit 5: Fruit tree rootstocks.
Description: Description, use and characteristics of rootstocks, rootstock-variety relationship, rootstocks used in fruit trees.

Unit 6: Propagation in fruit trees.
Description: Vegetative or generative propagation, seeds, grafting, cuttings, layering, propagation methods, *in vitro* propagation.

Unit 7: Planting and pruning fruit trees.
Description: Field preparation, planting strategy, fruit tree training system, mechanisation of production, pruning principles, optimal pruning according to tree age.

Unit 8: Fertilisation management in fruit trees.
Description: Inorganic and organic fertilisers, types of fertilisers, application methods, fertilisation monitoring, hydro-fertilisation, leaf diagnosis and soil analysis.

Unit 9: Irrigation and soil treatment in orchards
Description: Water use efficiency in orchards, irrigation methods in orchards, weed management in orchards.

Unit 10: Pollination and fertilisation of flowers
Description: Pollination by insects and wind, self- and cross-pollination, self-fertile varieties, fruit set, yield.

Unit 11: Fruit thinning and development
Description: Fruit cell division and enlargement, fruit development, fruit types, physiological disorders, thinning time in fruit trees, mechanical thinning.

Unit 12: Harvesting, ripeness and fruit maturation

Description: Determining fruit quality at harvest, factors affecting fruit ripeness and maturation, physiological and biochemical transitions from unripe to ripe fruit.

Unit 13: Post-harvest fruit management and quality
Description: Green technology treatments after harvest, fruit preservation options, maintaining fruit quality during refrigeration, fruit damage from refrigeration.

[SAFS 603] – New Trends in Floriculture

Statistics and economic data on floricultural production. International trade in floricultural products. Applications of supplemental and photoperiodic lighting as well as carbon dioxide in floricultural crops. Production and distribution of floricultural propagating material. Cutting rooting systems. Micropropagation of floricultural species. Cultivation of roses, carnations, chrysanthemums, gerberas, gypsophila and tulips for cut flowers. Cultivation of gardenias as pot plants. General topics on indoor and outdoor ornamental plants

Laboratory part: Organisation and operation of a greenhouse for the production of floricultural plants. Heating, cooling, shading and darkening of greenhouses. Soil disinfection. Supplementary and photoperiodic lighting, irrigation and hydroponic systems. Benches, floricultural machinery and instruments. Substrates and plant containers. Cutting rooting systems (mist, fog, aeroponics). Visits to floricultural greenhouses, nurseries and flower markets.

[SAFS 604] – Water Resources and Irrigation Engineering

Introduction to water resource management in agriculture. Methods for estimating crop water requirements, combined with the calculation of irrigation requirements and the development of optimised irrigation planning strategies. Overview of irrigation systems in the field and the design and optimisation of collective irrigation networks. Hydrology of groundwater and surface water resources in the context of water supply for agricultural use. Key water quality parameters relevant to irrigation. Integration of smart farming technologies and precision farming practices into irrigation to enhance water use efficiency. Analysis of water resource management policies and regulatory frameworks that support sustainable and climate-resilient water management in agriculture.

[SAFS 605] – Applied Entomology in Agriculture

Module 1: Insect diversity and ecology
Description: Phylogeny and diversity of insects. Their role in the environment and impact on humans. The effect of climate change on insect ecology.

Unit 2: Structure and Function of Insects
Description: Morphology, internal anatomy, physiology and adaptation to different environments.

Unit 3: Development and life cycle of insects

Description: Reproduction, metamorphosis, hormonal regulation, diapause and adaptation to abiotic stresses.

Unit 4: Behaviour and sociality of insects
Description: Communication, movement, foraging and mating behaviour.

Unit 5: Symbiosis in insects
Description: The role of symbiotic organisms in the adaptation, development and reproduction of insects. The microbiome of insects.

Unit 6: Insect–plant interactions
Description: Plants as food for insects, plant defence mechanisms, effects of insects on plants, conversion of herbivorous insects into crop pests, mutualism and pollination.

Unit 7: Assessing the impact of insects on crops
Description: Insect sampling and damage to agricultural crops. Economic thresholds and levels of economic damage.

Unit 8: Cultural and mechanical insect control measures
Description: Crop rotation, hygiene, trap crops, planting practices, soil management, insect removal, physical barriers and other technological means (temperature control, radiation).

Unit 9: Biological control of insect pests
Description: Biology of parasitoids, predators and insect pathogens. Biological control strategies and agroecology.

Unit 10: Conventional and 'green' insecticides
Description: Mode of action of chemical and 'green' insecticides, management of resistance to 'green' insecticides and other low-risk insecticides.

Unit 11: Semiochemicals and insect control
Description: Use of pheromones and other semiochemicals for insect monitoring and control.

Module 12: Biotechnological methods of pest control
Description: Development of resistant plant varieties, use of insect symbionts for pest control, sterile insect technique.

Unit 13: Insects in stored products and urban environments
Description: The impact of insects on post-harvest production and methods of managing them. Insects of importance to public health.

Laboratory exercises: Insect classification and plant protection
Identification and characteristics of the main insects: Orthoptera, Hemiptera, Dermaptera, Thysanoptera, Lepidoptera, Coleoptera, Hymenoptera, Diptera. Insect collection and preservation. Demonstration of insect management tools and equipment (videos, laboratory exercises).

[SAFS 606] – Controlled Environment Systems (Animals and Plants)

- *Unit 1: Introduction to Controlled Environment Systems* (Concepts and historical development of Controlled Environment Agriculture – importance in sustainable food systems).
- *Unit 2: Environmental Parameters and Their Importance* Effects of temperature, humidity, light and the gaseous microenvironment on the growth and productivity of plants and animals.
- *Unit 3: Measurement and Monitoring Technologies* (Sensors and data logging systems; applications of the Internet of Things (IoT) in agriculture).
- *Module 4: Heating and Cooling Systems* (Energy transfer, heating methods, evaporative cooling, energy efficiency).
- *Unit 5: Ventilation and Air Flow Management* (Natural and mechanical ventilation systems; air quality and welfare).
- *Module 6: Lighting Systems and Photobiology* (Light spectrum, intensity and duration; lighting systems for plant growth and animal performance).
- *Module 7: Automation and Control Strategies* (Sensor systems, light intensity and duration; lighting systems for data-based management).
- *Unit 8: Controlled Environment Systems for Plants* (Design and operation of greenhouses, growth chambers, hydroponics and vertical farming).
- *Module 9: Controlled Environment Systems for Animals* (Design of livestock facilities for different species; microclimate management; thermal comfort indicators; waste and manure management).
- *Unit 10: Integration of Animal and Plant Production Systems* (Circular use of resources; recycling waste into nutrients; hydroponics and biogas utilisation; system interconnections).
- *Module 11: Sustainability and Energy Management* (Renewable energy applications, environmental impacts).
- *Unit 12: Case Studies and Emerging Technologies in Controlled Systems* (Smart agriculture, automation, artificial intelligence and robotics).
- *Module 13: Review and Presentation of Assignments* (Presentations of group assignments by students; synthesis of concepts; exam preparation).

[SAFS 701] – Ecology

Introduction to the Science of Ecology. Ecology and Evolution. Ecosystems and communities. Terrestrial biota. Energy and productivity in ecosystems. Food relationships, food webs in ecosystems. Biogeochemical cycles. Greenhouse effect. Nutrient balances in ecosystems. Adaptations of organisms to the environment. Population growth and regulation. Demography. Intraspecific competition. Interspecific (biotic) interactions (competition, predation, mutualism, cooperation) - Ecosystem homeostasis. Ecosystem development and evolution (succession).

[SAFS 702] – Principles of Sustainable Oenology and Wine Production.

Introduction to oenology and stages of winemaking.

Basic winemaking techniques (red, white, rosé, sparkling wines). Chemical and biochemical principles of must processing, fermentation and wine maturation/ageing.
Impact of climate change on the composition, fermentation and quality of grape wine.
Regulatory frameworks, OIV (International Organisation of Vine and Wine) guidelines for sustainable viticulture and responsible wine consumption.
Reducing the use of SO_2, alternative means or strategies.
Circular economy and green processing: utilisation of waste and by-products (pomace, lees), low energy consumption processes.
Issues of sustainable packaging and supply chain.
Case studies: sustainable wineries, innovative production and management practices (water and energy management in wineries).
Future trends in sustainable oenology: precision oenology, process monitoring tools.

[SAFS 703] – Food Engineering

Fundamental concepts of engineering: thermophysical properties of food, forms of heat, mass and energy balances, steam property tables. Momentum transfer: flow types, Reynolds number, friction during fluid flow, mechanical energy balances – Bernoulli's equation. Heat transfer: heat transfer mechanisms, heat transfer by conduction, convection and radiation, dielectric and ohmic heating, heat transfer under steady (permanent) and unsteady (non-permanent) conditions. Mass transfer: Fick's law, mass transfer coefficients, diffusion equations. Momentum transfer processes/equipment. Heat transfer processes/equipment. Mass transfer processes/equipment. Mixed transfer processes–equipment. Physical separation processes/equipment. Forming processes/equipment. Production process flow diagrams. Principles of food processing equipment selection and design. Energy management in the food industry.

[SAFS 704] – Plant Breeding and Propagation

1. The importance of plant breeding in agricultural development.
2. The reproductive system of plants and its importance in plant breeding.
3. Intrinsic reproduction, autogamy and cross-pollination, asexual reproduction and propagating material.
4. The concepts of phenotype, genotype and interaction with the environment.
5. Assessment of GxE interactions and application of appropriate experimental designs.
6. Types and creation of new varieties (pure lines, populations and hybrids).
7. Implementation of plant improvement programmes.
8. Genetic basis and selection criteria. Testing for combination ability and diallel crosses.
9. Esterosis and male sterility for the production of new hybrids.
10. Examples in major crops, vegetables and ornamental plants.
11. Methods of improvement, selection and evaluation. Mass selection procedures.
12. Backcross method and evaluation of series (varieties).
13. Applications of biotechnology in plant improvement.
14. Use of *in-vitro* techniques in plant breeding as a tool for producing new varieties.
15. The achievements of genetic engineering in plant breeding.
16. Production of transgenic plants (GMOs). Genetic modification systems.
17. Transgene expression. Detection and control of genetically modified plants and their products.

18. Creation of varieties resistant to herbicides, insects, bacteria and viruses.
19. Prospects and concerns arising from the application of biotechnology in agricultural practice.
20. Applications of molecular markers in plant breeding.
21. Reproduction for sustainability.
22. Organic and participatory plant breeding. Breeding for resistance to abiotic stress and low-input farming systems.
23. Plant Propagation & Seed Production.
24. Technologies and methodologies for hybridisation, control and identification of vegetation and seed viability, certification, DUS.
25. Conservation, Biodiversity-Gene Flow. Seed marketing. EU legislation on PGR.

[SAFS 705] – Reproductive Physiology of Farm Animals

Unit 1: Male and female reproductive systems.
Description: Anatomy and physiology of the male and female reproductive systems.

Unit 2: Oestrus cycles.
Description: Puberty, photoperiod, follicular development.

Unit 3: The role of the nervous system in reproduction.
Description: Hypothalamic-pituitary axis.

Unit 4. Reproductive endocrinology.
Description: Endocrine system, endocrine glands.

Unit 5: Hormones involved in reproduction.
Description: Hormones, hormone receptors, endocrine disruptors.

Unit 6: Gametogenesis.
Description: Oogenesis, Spermatogenesis, Meiosis, Mitosis.

Unit 7: Fertilisation.
Description: Sperm maturation, Sperm activation, Acrosome reaction.

Unit 8: Embryonic development.
Description: Basic principles of embryonic development in mammals and birds.

Unit 9: Reproductive Biotechnology.
Description: Basic principles of reproductive biotechnology, Artificial insemination, Embryo transfer.

Unit 10: Precision Animal Husbandry in Farm Animal Reproduction.
Description: Basic principles of precision animal husbandry, applications of precision animal husbandry in the reproduction of farm animals.

Unit 11: Climate Change and Reproduction.
Description: Impact of climate change on reproductive parameters.

Unit 12: Genetic Technology.
Description: Applications of genetic technology in the reproduction of farm animals, Application of genetic analyses in reproductive management schemes.

Unit 13: Genetic Polymorphisms - Molecular Functional Markers.
Description: Effect of genetic polymorphisms on reproductive function, Identification of Functional Molecular Markers.

[SAFS 706] – Nutrition and Metabolism with an emphasis on the Mediterranean Diet

The course offers a structured introduction to human nutrition and metabolism, with selected insights into the Mediterranean Diet as a dietary model that promotes health and sustainability. The main topics include:

1. The historical development of nutrition science and the emergence of dietary guidelines.
2. The structure, digestion, absorption and metabolism of macronutrients and micronutrients, including selected bioactive compounds.
3. The basic anatomy and physiology of the gastrointestinal tract, the processes of digestion and absorption, and an introduction to the gut microbiome.
4. Food groups and dietary guidelines.
5. The role of nutrition in major health challenges (e.g. obesity, metabolic syndrome, non-communicable diseases) throughout the life cycle.
6. The principles, key food groups and mechanisms of action of the Mediterranean Diet, as well as its role in the context of sustainable food systems and the Sustainable Development Goals.
7. Introduction to advanced methods of dietary assessment and food intake biomarkers (BFIs) as tools for linking food consumption to nutrition and health, including applications in personalised nutrition.
8. Examination of mechanistic and epidemiological evidence on the effect of food processing technologies on inflammation and the nutritional value of food, with a specific focus on bioactive components-phytochemicals present in selected plant-based food groups of the Mediterranean diet, known for their benefits against metabolic disorders and chronic diseases.

[SAFS 707] – Landscape Architecture

Unit 1: Introductory course in Landscape Architecture: definition and subject matter of the field of study; studies in the School of Agriculture; characteristics and internationally recognised landscape architecture projects; introduction to freehand drawing and the concept of scale.
Unit 2: Introductory course in Landscape Design: definition, objectives and scope.
Unit 3: History of Landscape Architecture: from antiquity to the Italian gardens of the Renaissance.
Unit 4: History of Landscape Architecture: from French formal gardens to contemporary landscape architecture.
Unit 5: Landscape design techniques: the concept and application of scale; architectural design; basic principles of architectural design.

Unit 6: Spatial analysis: recording, documenting and evaluating all natural, environmental and anthropogenic parameters that make up a comprehensive landscape analysis.
Unit 7: (a) Fundamental theoretical principles of design: unity, functionality, simplicity, scale.
(b) Basic elements of landscape composition: line, form, texture, colour, variety, repetition, balance, emphasis.
(c) Basic design principles: spatial organisation, spatial connectivity, connection of elements, dominance of space, form and shape, connection of geometric forms, rhythm.
Unit 8: Use of plants in landscape architecture: planting dimensions; cultivation and maintenance requirements; ecological, functional and aesthetic properties of plants.
Unit 9: Topography: contour lines, relief interpretation and slope calculation.
Unit 10: Basic principles of irrigation systems, landscape lighting and construction details.
Unit 11: Brief introduction to Nature-Based Solutions, working with natural systems and the principles of ecological design and spatial planning.
Unit 12: Brief introduction to Landscape Design: basic principles and methodologies.
Module 13: Design and organisation of rural landscapes.

[SAFS 801] – Vegetable Gardening

Module 1: Introduction to vegetable production Description: The importance and scope of vegetable production, the classification of cultivated species, as well as the current opportunities and challenges facing the vegetable growing sector.
Unit 2: Soil and climate requirements Description: The role of environmental factors (light, temperature, humidity, etc.) and soil characteristics in the growth, yield and quality of vegetables.
Unit 3: Nursery management and crop establishment Description: Seed selection and quality, modern seed management technologies, seedling production, as well as techniques and timing of transplanting.
Module 4: Sustainable vegetable production Description: Principles of organic and integrated fertilisation, as well as the application of sustainable and climate-smart technologies in vegetable production.
Module 5: Post-harvest handling Description: Criteria for harvest maturity, packaging methods, quality control and strategies for reducing post-harvest losses.
Unit 6: Principles of greenhouse production Description: Protected cultivation systems (greenhouses, net houses), as well as basic principles of microclimate control and management.
Unit 7: Hydroponic Cultivation Description: Types and properties of substrates, principles of preparation and management of nutrient solutions.
Unit 8: Vegetable Nutrition and Physiology Description: Vegetable requirements for macro- and micronutrients, common physiological disorders.
Unit 9: Main Leafy Vegetables Description: Cultivation practices for basic leafy vegetables.
Unit 10: Main vegetables with edible underground parts Description: Cultivation practices for the most important root and tuber vegetables.
Unit 11: Main vegetables with edible bulbs or shoots Description: Cultivation practices for basic bulbous vegetables and vegetables with edible shoots.

Unit 12: Main fruit vegetables I Description: Cultivation practices for basic fruit vegetables, such as tomatoes, peppers and aubergines.
Unit 13: Main fruit vegetables II Description: Cultivation practices for basic fruit vegetables, such as cucumbers and melons.

[SAFS 802] – Beekeeping and Hive Products

Beekeeping worldwide, anatomy and morphology of bees, biological cycle of bees, structural components of the hive, behaviour of bees, beekeeping equipment, basic beekeeping practices, diagnosis and treatment of common bee pests and diseases, main bee plants, the contribution of bees to pollination, production and quality of main hive products (honey, pollen, propolis, royal jelly), honey marketing.

[SAFS 803] – Agricultural Management

1. Introduction to Agricultural Management
   - Definition, scope and objectives
   - Role of the farm manager in modern agriculture
   - Types of farms and farming systems
2. Farm Resources and the Production Environment
   - Land, labour, capital and management
   - Physical, technical and economic constraints
   - Farm data and record-keeping systems
3. Decision-making principles in agriculture (3 weeks)
   - Decision-making processes and types of decisions
   - Risk and uncertainty in agricultural production
   - Behavioural aspects of decision-making
   - Basic elements of linear programming for farm optimisation
4. Economic Concepts Applied to Farm Management (3 weeks)
   - Cost, revenue and profit relationships
   - Marginal analysis and resource allocation
   - Economies of scale and scope
5. Risk and Uncertainty Management (2 weeks)
   - Types and sources of risk
   - Tools: sensitivity analysis, scenario analysis, insurance, diversification
   - Decision-making under uncertainty
6. Political and Institutional Framework
   - CAP measures affecting farm structure and decisions
   - Environmental and rural development policies
   - Compliance requirements and incentives
7. Sustainability and Innovation in Farming
   - Sustainable intensification and resource efficiency
   - Precision farming and digital tools in management
   - Diversification and resilience strategies

8. Case Studies, Real Data and Practical Applications

[SAFS 804] – Earth Observation and Geoinformatics in Agri-Food Systems

Module 1

1. Satellites, UAVs, GPS and their sensors
2. Satellite remote sensing for crop mapping, yield prediction and soil moisture
3. Precision agriculture support with UAVs

Lab exercise: Copernicus data for spatial variability analysis

Lab exercise: Creating fertiliser prescription maps

Module 2

4. Spectroscopy for crop health, soil analysis and food quality
5. Sensors and near-field applications
6. Spectral data analysis using artificial intelligence for decision support

Laboratory exercise: Spectral identification of soil properties

Laboratory exercise: Applications in smart agriculture

Unit 3

7. Geographic Information Systems (GIS), Farm Management Information Systems (FMIS) and applications for spatial analysis
8. Geodatabases, data layers and sources
9. Spatial decision support systems for food security and policy making

Laboratory exercise: GIS for spatial modelling of agricultural landscapes, environmental impacts and food accessibility

Laboratory exercise: Cloud GIS for access to analysis-ready data

Module 4

10. Integration at various scales, from precision agriculture to regional monitoring
11. Hands-on training with satellite imagery, UAVs, spectroradiometer and GIS tools
12. Case studies using Python and open source tools (e.g., QGIS, SNAP, Orange)
13. Group Work: Proposals for a real problem in the agri-food sector using data

[SAFS 805] – Organic Agriculture

1. Fundamentals of Organic Agriculture
2. Agroecology and Ecosystem Thinking
3. Ecology & Soil Physics
4. Soil Fertility and Organic Amendments
5. Soil and Water Resource Management
6. Plant Physiology & Crop Requirements
7. Crop system design and agroecosystem design
8. Variety Selection and Improvement for Organic Agriculture
9. Ecological pest management.
10. Diseases and weeds.
11. Organic Certification & Standards
12. Agricultural businesses & economics
13. Climate, Sustainability & Future of Organic Agriculture

14. Agroecosystem Design or Organic Production Plan
15. Discussion on ecological, economic and social sustainability
16. Student presentations

[SAFS 806] – Sustainable Aquaculture and Fisheries

Unit 1: Physicochemical parameters of water suitable for aquaculture and fisheries.
Description: Factors such as temperature, pH, dissolved oxygen, salinity and degree to which they can affect the survival of aquatic populations, Characteristics of water suitable for aquaculture.

Unit 2. Elements of Ichthyology and Biology of Aquatic Organisms.
Description: Anatomy and physiology of fish and shellfish, general biology of aquatic organisms, systematic classification of fish.

Unit 3: Interactions between the environment and aquaculture, fisheries management and sustainability.
Description: The environmental footprint of aquaculture, genetic pollution from aquaculture and its impact on fisheries, the problem of overfishing.

Unit 4: Selection of location for aquaculture facility – siting of aquaculture facilities.
Description: Criteria for selecting species suitable for aquaculture.

Unit 5: Aquaculture systems and methods.
Description: Production systems, tank systems, recirculated aquaculture systems (RAS), biofloc.

Unit 6: Shellfish farming.
Description: Biology of shellfish, Main species farmed, Organisation and techniques of shellfish farming.

Unit 7: Nutritional requirements of fish and shellfish.
Description: Basic principles of aquatic organism nutrition, Main stages of aquaculture production, Digestion and metabolism, Energy and feed, Basic characteristics of fish feed.

Unit 8: Cultivation of algae and microalgae.
Description: Basic principles of aquatic plant biology, Products produced.

Unit 9: Visit to aquaculture facilities.

Unit 10: Fishing communities, ecosystems and the functional role of fish.
Description: Zoning, plankton - benthos and nekton, plant communities, Mediterranean fish.

Unit 11: Fisheries biology and management
Description: Legislation, fish population biology and threats, invasive species, migrations.

Unit 12: Climate change, fisheries and aquaculture

Description: Stress, oxygen - metabolism - energy, homeostasis.

Unit 13: Operation of fish and shellfish hatcheries
Description: Development of tank systems for genetic selection and improvement, enhancement of fish stocks and modelling of real aquatic ecosystem conditions.

[SAFS 807] – Design of Industrial Agri-Food Units and Economic Evaluation

The course introduces students to the application of techno-economic feasibility studies in chemical process industries, with particular emphasis on food processing plants. It is based on a detailed feasibility study of a selected plant, which varies each year, and on the preparation of an analytical report that constitutes a significant part of the overall course grade. The course covers the development and interpretation of methodological flow diagrams and the application of mass and energy balances for process analysis. Students learn preliminary dimensioning and the selection of basic process equipment, as well as methods for cost estimation, economic evaluation and project profitability assessment. To support this, the course includes an extensive laboratory component where students use specialised software for unit design and economic evaluation. The course also covers process productivity analysis, bottleneck identification and strategies for process optimisation. In addition, students explore the optimisation of operating conditions using techno-economic criteria and process scaling principles. Finally, the course examines the identification and evaluation of operational parameters in outputs to ensure compliance with food quality standards and sustainable process operation.

[SAFS 901] – Precision Agriculture and Precision Livestock Farming

1. Introduction to Precision Agriculture
2. Mapping and managing spatial variability within the field
3. Precision Tillage and Controlled Traffic Farming Systems
4. Precision Seeding
5. Precision Irrigation
6. Precision Fertilisation
7. Precision Crop Protection
8. Yield Monitoring and Mapping
9. Precision Post-Harvest Management
10. Introduction to Precision Livestock Farming
11. Precision Livestock Farming Applications
12. Adoption and Sustainability of Precision Livestock Farming
13. Adoption and Sustainability of Precision Farming

[SAFS 902] – Agricultural Accounting

Unit 1: Introduction to Agricultural (Rural) Accounting
- Purpose and importance of accounting in agricultural businesses

- Differences between agricultural accounting and general business accounting
- Legal and institutional framework

Unit 2: Basic Accounting Principles

- Double-entry accounting system
- Assets, liabilities and equity
- Income, expenses and profit concepts
- Cash basis accounting versus accrual basis accounting

Unit 3: Agricultural Records and Documentation

- Types of agricultural records (production, financial, inventory)
- Record-keeping systems and tools
- Digital record keeping and farm management software

Unit 4: Financial Statements in Agriculture

- Balance sheet: structure and valuation of assets (land, livestock, machinery)
- Income statement: operating income, operating expenses, depreciation
- Cash flow statement: cash inflows/outflows and liquidity assessment

Section 5: Valuation of Agricultural Assets

- Valuation and revaluation of land
- Valuation of livestock (breeding, fattening, marketable animals)
- Methods of depreciation of machinery and equipment
- Biological assets and inventories

Unit 6: Costing in Agriculture

- Classification of costs: fixed, variable and overhead costs
- Allocation of costs per production activity
- Cost centres and activity-based costing
- Break-even analysis

Unit 7: Depreciation and Capital Management

- Depreciation methods (straight-line method, declining balance method, units of production method)
- Replacement and investment decisions
- Impact of depreciation on profitability

Unit 8: Taxation and Agricultural Policies

- Tax obligations of farmers
- Agricultural subsidies and support schemes
- Accounting treatment of subsidies (CAP payments, investment support)

Unit 9: Budgeting and Financial Planning for Agricultural Holdings

- Partial and total farm budgets
- Annual budget and forecasts
- Credit and loan management

Unit 10: Financial Indicators and Performance Analysis

- Liquidity, solvency and profitability ratios
- Benchmarking against industry standards
- Interpretation of indicators for decision-making

Unit 11: Integrated Financial Management of Agricultural Holdings

- Linking accounting with farm planning
- Decision support tools and software
- Case studies of actual financial statements of agricultural holdings

[SAFS 903] – Digital and Predictive Food Microbiology and Quality Assurance Systems

This course provides an advanced understanding of the role of microorganisms in food systems and their relationship to food quality, safety and shelf life. It integrates modern microbiological tools, molecular techniques and predictive microbiology with quality assurance principles, food safety management systems (HACCP, ISO, GFSI, etc.) and regulatory frameworks. Students will develop both theoretical knowledge and practical skills for the design, implementation and evaluation of quality control systems in various sectors of the food industry.

[SAFS 904] – Renewable Energy Sources in Agriculture

1. Introduction to renewable energy in agriculture (energy demand in agriculture, challenges of dependence on fossil fuels, overview of renewable energy sources).
2. Principles and technologies of solar energy (basic photovoltaics, solar thermal systems, solar radiation characteristics, energy conversion efficiency, solar water pumping and irrigation, solar greenhouse heating).
3. Passive solar systems (design principles and agricultural applications, natural greenhouse heating, crop drying, ventilation, shading, thermal mass and farm building orientation to reduce energy demand and enhance sustainability).
4. Wind energy in agriculture (wind resource assessment, types and mechanics of wind turbines, factors affecting wind energy production, wind pumps, hybrid wind-solar systems)
5. Characteristics of biomass (agricultural biomass quantitative and qualitative characteristics and sources (plant residues, manure, agro-industrial waste).
6. Biomass utilisation (energy content and composition, technological overview (combustion, gasification, fermentation)).
7. Production and use of biogas in agriculture (principles of anaerobic digestion, types of digesters, upgrading and use of biogas (electricity, heat, fuel), digested residue as fertiliser).
8. Other biofuels in agriculture (bioethanol, biodiesel, biobutanol, raw materials and conversion processes, biofuel-compatible engines and machinery).
9. Biorefineries (pre-treatment, enzymatic hydrolysis, fermentation, extraction of high-value biomass products, circular economy concepts).
10. Geothermal energy in agriculture (geothermal principles, greenhouse heating, soil heating for early planting, hot water and thermal storage).
11. Hydroelectric power systems in agriculture (basic principles of hydroelectric power, micro- and pico-hydroelectric power, applications (milling, pumping, electricity generation).
12. Heat pumps - Group project (principles, types, efficiency, agricultural uses (greenhouse heating, milk cooling, water heating and energy recovery), cost savings, sustainability and integration with other renewable energy sources.
13. Review and project presentations (presentations of group projects by students, synthesis of concepts, exam preparation).

[SAFS 905] – Mediterranean and Functional Foods

The course provides students with an in-depth understanding of Mediterranean and functional foods, with an emphasis on their composition, bioactive compounds and health-promoting properties. It covers critical topics such as aromatic and medicinal plants (e.g. thyme, oregano), bee products (honey, propolis, royal jelly) and mastic, highlighting their functional, antimicrobial and antioxidant properties. The production, quality assessment and health benefits of key Mediterranean products such as Greek yoghurt, feta cheese and olive oil are examined. Particular emphasis is placed on the sustainable use of agricultural by-products and residues, including strategies for the recovery of bioactive compounds and the development of innovative functional foods. Students will also study conventional and modern processing methods, issues of authenticity and quality control, and the application of scientific evidence in product innovation and functional food development. The course also covers bioactive compound delivery systems (oil-based, hybrid, emulsion-based, etc.) and evaluation of delivery efficiency through *in vitro* digestion studies.

[SAFS 1000] – Thesis

Phase 1 — Topic Selection & Proposal (Weeks 1–4)

1. Identification of research area
2. Select a supervisor
3. Prepare a 2-5 page proposal that includes:
4. Background and motivation
5. Objectives and hypotheses
6. Methodology (experimental design, sampling, variables, data requirements)
7. Timeline
8. Proposal approval by supervisor/department

Phase 2 — Literature review (Weeks 4–8)

Systematic review of academic sources Conceptual framework Identification of gaps and justification of research

Phase 3 — Method Development & Preparation (Weeks 8–12)

Experiments/research/design models Obtain materials, equipment, access to farms or food laboratories Ethics and safety approvals (if required)

Phase 4 — Data collection (weeks 12–20)

Depending on the type of project, this may include: Field trials, greenhouse experiments, Laboratory analyses Soil, plant, food or environmental measurements Surveys, interviews, stakeholder consultations Testing of food product composition, processing or shelf life.

Phase 5 — Data Analysis (Weeks 20–24)

Statistical analysis (R, SPSS, Python, Excel) Modelling (crop models, LCA tools, sustainability indicators) Interpretation and comparison with the literature.

Phase 6 — Thesis Writing (Weeks 24–30)

Chapters: Introduction Literature review Materials & Methods Results Discussion Conclusions & Recommendations Bibliography Appendices (data tables, questionnaires, protocols).

Phase 7 — Oral Presentation 15–30 minutes Q&A with examination committee

6.7.3 Teaching - Knowledge assessment - Student evaluation

The JEUPS is taught with the physical presence of teachers/lecturers and students in the classrooms. By decision of the Curriculum Committee, a weekly online education zone may be established, common to all students of the JEUPS students, which will be used for tutorials and/or seminars and, exceptionally, for make-up classes in cases where classrooms are not available for this purpose on other days of the week. In exceptional cases of emergency circumstances that prevent face-to-face teaching, the Director of the Programme may, by specially justified decision, may be conducted online for a limited period of time, which is necessary in order to deal with the exceptional circumstances that justify the transition to distance learning in the short term.

Similarly, examinations are conducted with the physical presence of students and examiners in the School's classrooms, whether they are written or oral. As an exception, only oral examinations may be conducted remotely, provided that the identity of the examinees is verified and best practices for conducting oral examinations via the internet are followed in order to ensure their integrity. Remote written examinations are not permitted, except in the cases and under the conditions provided for by applicable law. By decision of the Curriculum Committee, written examinations may be conducted using tablets, laptops or PCs, provided that they are conducted in the presence and under the supervision of the examinees in the School's classrooms, under the guarantees of a comprehensive plan for the conduct of these examinations, which will ensure their integrity and the equal treatment of examinees.

Attendance at lectures, tutorials and any other organised educational activity of the Foreign Language Undergraduate Programme is compulsory. Students may be absent for up to thirty per cent (30%) of the total teaching hours of each course per semester, while deviations from this limit are allowed only in exceptional cases, upon approval by the Programme Committee. Regular attendance at lectures, tutorials and examinations is considered an essential element of academic excellence for the successful progress of students in the Programme.

Before the start of each semester, the Secretariat of the JEUPS prepares and publishes the detailed teaching timetable for the semester, ensuring that, as far as possible, (a) courses per academic year are distributed evenly throughout the week, (b) they are not scheduled at times that are too far apart on the same day on which they happen to be taught, and (c) they do not coincide with the teaching of other courses in the same semester.

At the end of the tenth (10th) week of teaching each semester, students are invited to participate in an anonymous online evaluation of the courses taught to them, as well as of the teaching staff, for the purpose of improving the level of their studies.

Student evaluation

1. JEUPS students are assessed through written or oral examinations, which are held at the end of the semester for the courses taught during that semester. All courses are examined during the repeat examination period in September.

2. Lecturers teaching courses that include laboratory exercises or projects are encouraged to submit two (2) grades at the end of each examination period: one corresponding to the student's performance during the laboratory exercises of the course (continuous assessment mark) and one corresponding to the student's performance in the final examination of the course, written or oral (final examination grade). The final grade will be calculated by combining the individual grades in a percentage to be determined by the lecturer.

3. Lecturers take special care for the oral examination of students with dyslexia, serious mobility problems or visual impairments that substantially hinder their participation in written examinations, in accordance with the procedure laid down in the provisions in force.

4. The Programme Secretariat publishes the detailed schedule of written examinations for each upcoming examination period in a timely manner. The lecturers, assisted by the Secretariat of the JEUPS ., are responsible for ensuring that there are a sufficient number of invigilators from among doctoral candidates and postgraduate students. Lecturers must be present at all times in the examination rooms, supervise the smooth and impartial conduct of the examinations, and take the necessary measures for these purposes.

5. Before taking the exam, each examinee must check that their name is listed on the Secretariat's computerised list of those eligible to take the exam for that particular course. Candidates are prohibited from copying or falsifying in any other way the results of the examination process, as well as from bringing books, aids, notes or electronic means of communication into the examination rooms. Any attempt to use electronic means of communication during the examination process is a particularly aggravating circumstance to the detriment of the examinee. Furthermore, examinees are prohibited from using a separate sheet of paper as a draft. For this purpose, they are allowed to use the last page of their written paper. In the event of a violation of these terms, the written paper will be marked as zero as an internal measure to ensure the integrity of the examination process, without prejudice to any other penalties that may be imposed under the provisions in force.

6. The designated invigilators must check the academic ID card proving the student's status and certifying the identity of the examinee, verify that the student's full name and special registration number are written on their paper, initial each paper, supervise examinees to ensure that they do not copy or talk to each other, continuously monitor the entrances and exits of the room, especially at the end of the examination time and when the papers are handed in, and ensure that no examinee leaves or departs from the examination room before thirty minutes (30') have elapsed since the distribution of the examination papers.

7. The written examination for each subject lasts a maximum of two (2) hours for all subjects.

8. After the papers have been handed in, the invigilators count the papers they have received and one of them certifies the number of papers received. The papers are then handed over to the lecturer, who counts them and certifies the number of papers received by signing in front of the invigilator.

9. Lecturers must submit the results of the final written and/or oral examinations to the Programme Secretariat, written and/or oral, in a single grade list for each course, no later than twenty-five (25) days after the date of each examination. In the case of oral examinations, the lecturer is not allowed to announce the results of the examination to the students who have been examined, but only collectively for all those examined, in writing and/or orally, at the end.

10. In all JEUPS courses, the result of the student's knowledge assessment is expressed numerically with grades from zero (0) to ten (10). In the grade book, failure is marked with grades from zero (0) to four (4) and success with grades from five (5) to ten (10).

11. The publication of examination results with the names of the examinees is not permitted in any way, except by listing their special registration number (SRN).

12. It is not permitted to transfer a student's grade from one examination period to the next. Clauses that may be included in the examinees' written work and concern their desire to be expelled if they are assessed with a grade lower than the desired one, or references to how many courses one owes in order to obtain a degree, are not permitted and, if included, they will not be taken into account.

13. The answers to the written exam questions, both practical and theoretical, are discussed after the results have been released by the lecturers with the interested students at specially designated times. and examinees have the right to see their written exam (for the current examination period) and request explanations on how it was assessed. Lecturers are required to post the suggested solutions to the practical questions they set in the exams on their course's e-learning platform.

14. To calculate the degree grade and the composition of the courses listed on it, the 45 courses required to accumulate 270 ECTS are counted, and the average of these courses corresponds to 90% of the student's grade, while the remaining 10% comes from the thesis, which corresponds to 30 ECTS, three hundred (300) ECTS in total.

6.8. Scholarships

Within the framework of the Joint Undergraduate Program of Studies in English , there is the possibility of awarding scholarships to students, based on academic and objective criteria and following a decision by the Study Programme Committee. For example:

- Up to three (3) scholarships per academic year may be awarded to students who distinguish themselves during the selection process, based on an overall assessment of their qualifications (including the results of the oral interview), and ranked among the top admitted students of the cycle. These scholarships consist of full exemption from tuition fees for the first academic year.

- A scholarship of excellence with a fifty per cent (50%) exemption from tuition fees for the following academic year may be awarded to the student with the highest average grade in all courses each year, provided that they have successfully completed all courses within the prescribed time. In the event of a tie, the scholarship may be awarded to more than one student.
- The Program Steering Committee may award prizes for excellence to students who demonstrate outstanding performance during their studies. The awards may be accompanied by an honorary distinction or a cash prize. In particular, at the end of each academic year, an award may be given to the first-year student based on their overall performance in all courses and their consistency in attending classes. Similarly, an award for the best graduate may be given to the student with the highest academic performance during the course of study.
- Following a reasoned decision by the Program Steering Committee, full or partial exemption from tuition fees for students from war zones or under international or subsidiary protection, based on documented social and humanitarian criteria.
- In exceptional cases, a social scholarship may be awarded to candidates or students of the Programme who face serious financial difficulties, health issues, loss of a parent, or are living in a state of emergency or long-term crisis, following examination of the relevant application and accompanying supporting documents by the Program Steering Committee .
- There is also the possibility of granting reciprocal scholarships, which consist of exemption from paying part of the tuition fees, with the obligation of the student to offer specific work in support of the Programme. This work may include library assistance, administrative support, assistance with research projects or other activities to be determined by the Program Steering Committee, in consultation with the Secretariat and the members of the Academic Staff. The duration and content of the reciprocal scholarship are clearly specified at the time of award, and failure to comply with the obligations may result in its revocation.

The awarding of the above-mentioned scholarships and/or excellence awards, the specific conditions for awarding them, the obligations and rights of the scholarship recipients are determined following a decision by the Program Steering Committee and are at its sole discretion based on the financial capabilities of the Programme and its cash reserves.

6.9. Teaching Staff of the Joint Undergraduate Program of Studies in English

The teaching work of the Joint Undergraduate Program of Studies in English (JEUPS) is assigned by decision of the Program Steering Committee to lecturers whose field of expertise is relevant to the teaching work assigned to them. By decision of the Program Steering Committee, the teaching of courses is assigned to the teaching staff. The following may be employed as teaching staff:

1. members of the Teaching and Research Staff (TRS) of the Schools of Agriculture and Chemistry or other Schools of the Aristotle University of Thessaloniki or

other Higher Education Institutions (HEIs) with additional employment beyond their legal obligations as defined by current legislation,

2. Emeritus Professors or retired members of the Teaching and Research Staff of the Schools of Agriculture and Chemistry or other Schools of the Aristotle University of Thessaloniki or other Higher Education Institutions,

3. members of Special Teaching Staff (STS), Laboratory Teaching Staff (LTS) and Special Technical Laboratory Staff (STLS) of Higher Education Institutions, who hold a doctoral degree and have teaching experience, as well as sufficient scientific, writing or research activity,

4. appointed lecturers/tutors,

5. visiting professors and visiting researchers,

6. contract researchers,

7. researchers and specialist operational scientists at the research centres referred to in Article 13A of Law 4310/2014 (A' 258) or other research organisations in Greece and abroad, who hold a doctoral degree and have teaching experience and sufficient scientific, writing or research activity,

8. postdoctoral researchers and young scientists who hold at least a doctoral degree and have specialised knowledge or relevant experience in the subject area of the JEUPS,

9. collaborating professors.

The teaching duties of the JEUPS are assigned by decision of the Curriculum Committee, following a recommendation by the Director. The decision of the Curriculum Committee must ensure that the teaching and educational activities in general assigned to faculty members of the Schools of Agriculture and Chemistry within the framework of the JEUPS do not in any way affect their other educational, research and administrative obligations towards the Schools and the Greek-language U.P.S. To this end, a certificate from the Director of the School to which the Lecturer belongs or the Head of the School to which the Lecturer belongs is required, stating that their participation in the JEUPS does not interfere with their other educational, research and administrative obligations towards the Departments and the Greek-language U.P.S. or the Chair of the Department to which the Lecturer belongs, that their participation in the JEUPS does not interfere with their teaching, research and administrative obligations to the Departments and the Greek-language U.P.S. The decision of the Curriculum Committee on the assignment of teaching duties is issued no later than the beginning of each academic semester and must include the lecturers of the JEUPS, the courses, educational activities and total teaching hours assigned to each lecturer in accordance with the curriculum for each academic semester, as well as the total cost of their remuneration, if remuneration is provided for, and is communicated without delay to the Special Account for Research Funds (SARF) of the Aristotle University of Thessaloniki. All categories of teaching staff are remunerated exclusively from the resources of the JEUPS, provided that their remuneration is provided for. The amount of remuneration per category of teaching staff is determined by decision of the Curriculum Committee and in accordance with the rules governing the SARF A.U.Th. regarding contracts for the remuneration of the

Institution's staff, external collaborators, the performance of additional teaching work and the total number of teaching hours assigned in each case.

The obligations of lecturers/teachers include, among other things, the description of the course or lectures, the method of examination of the course, as well as the communication with students necessary for the academic purposes of the programme.

Teachers are obliged to adhere to the weekly teaching schedule in accordance with the course timetable, as drawn up and determined by the Committee, and to follow the examination and assessment conditions as described in these Regulations.

Teachers who are on educational leave or suspension of duties may provide teaching services at the JEUPS ., provided that their programme allows it and the Committee deems it to be essentially and practically feasible on a case-by-case basis.

6.10. JEUPS Revenue - Tuition Fees - Financial Management Procedure

The resources of the JEUPS may come from:

1. tuition fees,
2. donations, sponsorships and financial support of any kind,
3. bequests,
4. resources from research projects or programmes, particularly those of the European Union,
5. own resources of the Aristotle University of Thessaloniki, the amount of which may not exceed five per cent (5%) of the total budget of the JEUPS, and
6. any other legal cause.

Tuition fees

For studying at the JEUPS, a total tuition fee of thirty-five thousand (35,000) euros, seven thousand (7,000) euros per academic year, is payable. The amount of tuition fees is set and amended by decision of the Senate of the Aristotle University of Thessaloniki, while the method and time of payment may be adjusted by decision of the Program Steering Committee.

Tuition fees are paid by the students themselves (or by a third party on their behalf) into a bank account held by the Special Account for Research Funds (SARF) of Aristotle University of Thessaloniki. A.P.Th., in ten (10) equal instalments of three thousand five hundred euros (€3,500): The first instalment is due during the student's enrolment in the Programme, and the subsequent instalments are due before the start of each semester. After the tuition fees have been paid, the corresponding receipt is issued and the student is notified electronically.

When submitting their application, candidates must pay the amount of one hundred and fifty (150) euros as a file management fee. The application is not considered complete and is not forwarded for evaluation if the corresponding amount has not been paid and the relevant proof of transaction has not been sent by the candidate.

Payment is made electronically, according to the instructions sent with the confirmation of receipt of the application. The amount is deposited with the E.L.K.E. A.P.Th. and is not refundable in case of rejection or withdrawal of the application.

If accepted into the Programme, candidates are required to pay the amount of one thousand euros (€1,000) as a deposit for tuition fees. This amount is also paid to the ELKE-AUTH and is non-refundable in case of withdrawal from the programme.

Financial Management Procedure

The management of the resources of the Interdepartmental X.P.P.S., supervised by the Department of Agriculture in collaboration with the Department of Chemistry, is carried out by the Study Programme Committee through the Special Account for Research Funds (SARF) of the Aristotle University of Thessaloniki and are allocated on a priority basis to cover the operational needs of the Interdepartmental Postgraduate Programme and, if there are cash reserves available, these may be made available to cover other educational and development needs of the Departments of Agriculture and Chemistry. The available cash, if any, will be allocated at a rate of 89.1% to the Department of Agriculture and 10.9% to the Department of Chemistry for the above purposes. By decision of the Administrative Council, following a recommendation by the Research Committee of the Special Account for Research Funds (SARF), the percentage retained in favour of SARF of the Aristotle University of Thessaloniki is determined.

The operating expenses of the JEUPS also include the remuneration of lecturers/teachers and visiting professors. The amount of remuneration per category of teaching staff is determined by the Curriculum Committee, in accordance with the Remuneration Regulations of the SARF A.P.Th. and up to the maximum permitted limit per teaching hour. The Committee may decide on a sliding scale of remuneration, depending on the number of students admitted per academic year.

Furthermore, the operating expenses of the Programme also include travel expenses incurred for the organisation and operation of the JEUPS and approved by its Curriculum Committee. Travel expenses are covered by the budget of the JEUPS and are paid to travellers after upon presentation of the relevant supporting documents, in accordance with Article 248 of Law 4957/2022 and subsequent relevant amendments.

The resources of the JEUPS are allocated as follows:

1. an amount corresponding to ten per cent (10%) of the total revenue from tuition fees is retained by the E.L.K.E. for the financial management of the Programme. The Administrative Council decides whether the remaining amount, after deduction of the ELKE withholding, is transferred to the regular budget or made available for the creation of projects/programmes through the ELKE A.P.Th. (89.1% in the Department of Agriculture and 10.9% in the Department of Chemistry) in order to cover, the needs of the Greek-speaking P.P.S. of the Departments of Agriculture and Chemistry, which operate without tuition fees, as well as to cover the research, educational and operational needs of the Departments of Agriculture and Chemistry of the A.U.Th. The income of the JEUPS of paragraphs b) to d) of

Article 11 is subject to a deduction in favour of E.L.K.E. that applies to income from corresponding sources of funding,

2. the remaining amount of the total revenues of the JEUPS is available to cover the operating expenses of the JEUPS .

6.11. Administrative Support - Material and Technical Infrastructure

The International Student Support Unit is responsible for supporting international students at the JEUPS ., pursuant to Article 212 of Law 4957/2022. The mission of the International Student Support Unit is to support international students enrolled in first, second and third cycle study programmes at the University. In particular, the responsibilities of the International Student Support Unit are:

1. Supporting international students in enrolling in foreign-language study programmes at Aristotle University of Thessaloniki.

2. Supporting foreign students in obtaining entry visas and residence permits in Greece for study purposes and communicating with the relevant public authorities on these matters.

3. Supporting the process of concluding contracts for the rapid issuance of residence permits for study purposes, in accordance with Article 37 of Law 4251/2014 (A' 80).

4. Supporting students during their settlement in Greece.

5. Cooperation with the relevant departments of the Aristotle University of Thessaloniki to assist foreign students.

6. Organising courses for learning Greek or other foreign languages in cooperation with the relevant departments of the Aristotle University of Thessaloniki.

7. Exercising any other responsibility specified in the Organisation of the Higher Education Institution and related to the subject matter of the International Student Support Unit.

Administrative support for the programme.

The Departments of Agriculture and Chemistry of the Aristotle University of Thessaloniki, with their long experience in the organisation and implementation of first, second and third cycle study programmes, are responsible for the overall administrative and technical support of this Foreign Language Study Programme. Secretarial support for the Programme is provided by the Secretariat of the JEUPS Secretariat, which may be staffed by personnel from the Secretariats of the two participating Departments, constituting a key operational arm of its administration and operating under the supervision of the Study Programme Committee.

More specifically, the Secretariat of the Programme:

1. Provides administrative support to the Committee and the Director of the JEUPS .

2. Handles matters relating to the educational life cycle of students, from enrolment to graduation and the awarding of their degrees.

3. Maintains the protocol, printed and digital archives of the Programme.

4. Handles administrative procedures relating to the Programme's teaching staff (contracts, transfers, etc.).

5. It cooperates with the Special Account for Research Funds (SARF) of Aristotle University of Thessaloniki for the financial management of the Programme and the support of related procedures.

The **coordination of the Secretariat** of the JEUPS, as well as the keeping of the minutes of the Programme Committee, may be undertaken by a member of the Secretariat of the Greek-language Undergraduate Programme of the Department of Agriculture or the Department of Chemistry, who has the formal qualifications to perform the duties of Head, in accordance with Article 1 of Law 3839/2010. The relevant assignment is made by decision of the JEUPS Committee.

In this context, in order to support the needs of the Programme, the following may be employed, in accordance with Article 104 of Law 4957/2022:

1. Members of the regular administrative staff of the Aristotle University of Thessaloniki, with additional employment beyond their legal obligations, following a decision by the Research Committee of the Special Account for Research Funds (SARF), upon recommendation by the Committee of the JEUPS.

2. additional staff, selected in accordance with the procedure of Article 243 of Law 4957/2022.

The cost of remuneration for all categories of staff shall be borne exclusively by the Programme budget.

Technical support for the operation of the programme is provided centrally by specialised staff of the Digital Governance Unit of the Aristotle University of Thessaloniki, the existing technical staff of the General Directorate of Technical Services and Computerisation of the Aristotle University of Thessaloniki, and the technical staff of the Departments of Agriculture and Chemistry.

The existing building and material infrastructure of the Department of Aristotle University of Thessaloniki is used for the implementation of the JEUPS courses.

6.12. Type of Degree Awarded

The JEUPS degree is a public document and is awarded to graduates of the programme.

The degree is issued by the Secretariat of the JEUPS It bears the names of the Department of Agriculture, the Department of Chemistry and the Institution, the emblem of the Aristotle University of Thessaloniki, the date of completion of studies, the date of issue of the degree, the graduation protocol number, the title of the JEUPS ., the degree grade, the student's details and the assessment rating: Good, Very Good, Excellent.

Graduates may be awarded a certificate of successful attendance and completion of the programme prior to the award ceremony.

In addition to the degree, a Diploma Supplement is also awarded, in accordance with Article 15 of Law 3374/2005 and Ministerial Decision Φ5/89656/Β3/13-8-2007 (Government Gazette 1466/Β΄). The Diploma Supplement is an explanatory document that provides detailed information on the nature, level, content, educational context and legal status of the studies successfully completed. It does not replace the official degree or the detailed transcript issued by the Institution.

6.13. Certification - Evaluation of JEUPS .

Following the issuance of the decision to establish the JEUPS and prior to its commencement of operations, the JEUPS must be certified by the Hellenic Authority for Higher Education (H.A.H.E.), in accordance with paragraph 1(c) of Article 8 of Law 4653/2020 (A' 12). After their establishment, JEUPS are periodically certified, in accordance with subparagraph bb) of paragraph b) of Article 8 of Law 4653/2020, as part of the evaluation of the academic unit to which they belong.

The JEUPS is evaluated as part of the periodic evaluation/certification of the academic unit by the National Authority for Higher Education. In particular, the overall assessment of the work carried out at the JEUPS is evaluated, the degree to which the objectives set at its establishment have been achieved, its sustainability, the absorption of graduates into the labour market, the degree of its contribution to research, its internal evaluation by graduates, the advisability of extending its operation, as well as other information relating to the quality of the work produced and its contribution to the national strategy for higher education.

If, during the evaluation stage, the JEUPS is deemed not to meet the conditions for continuing its operation, its operation shall be terminated upon the graduation of the students already enrolled, in accordance with the decision establishing it.

Internal Evaluation of MODIP

In order to ensure and improve the quality of the JEUPS ., the Quality Assurance Unit of the Aristotle University of Thessaloniki (MO.DI.P.-AUTH) conducts periodic internal evaluations of the JEUPS within the framework of the Institution's Internal Quality Assurance System and in accordance with the instructions and guidelines of the Hellenic Authority for Higher Education (HAHE).

The obligations of the programme's administrative bodies and teaching staff also include all procedures provided for in the relevant guidelines and directives of MO.DI.P.-A.P.Th. for the internal and external evaluation and certification of Study Programmes and Academic Units.

Evaluation of teaching staff and courses by students

For the sole purpose of improving the level of studies at the JEUPS and with absolute assurance of their anonymity, students are invited to evaluate the courses and teachers each semester.

For reasons of uniformity in the collection of statistical data and the ability to extract information that can be used for the educational work of the Schools, Departments and the Institution as a whole, the evaluation questionnaires are prepared by the MO.DI.P. and may vary slightly, based on the specific characteristics and needs of each academic unit and/or each course. They are completed electronically.

The evaluation is conducted under the responsibility of the Internal Evaluation Team (I.E.T.) of the JEUPS , which consists of four (4) faculty members of the Department of Agriculture and one (1) faculty member of the Department of Chemistry, at the rank of Professor or Associate Professor, in collaboration with the MODIP of the Aristotle University of Thessaloniki, and is carried out through the latter's Quality Management Information System. The Administration and the I.E.T. of the JEUPS must take systematic action to involve students in the evaluation, in accordance with the guidelines of the MODIP and the relevant decisions of the Senate.

The I.E.T. of the JEUPS monitors, through the Quality Management Information System of the MODIP, the degree of student participation in the evaluation process, analyses the relevant results and informs the administrative bodies of the JEUPS and the respective academic unit. The evaluation questionnaires concern the course taught and the lecturer separately.

The administrative bodies of the JEUPS and the academic unit, in collaboration with the I.E.T. of the JEUPS are required to study the results of the evaluation, announce their findings, decide on the publication of the summary results of the evaluation, when deemed necessary and in any case after the announcement of the semester course grades, in accordance with the applicable legislation on the protection of personal data, and take action to address any problems or improve the JEUPS .

6.14. Table of Teaching Staff

The table below shows the teaching staff who have been selected based on their field of expertise and the courses they will teach. It should be noted that 35% of the hours in all JEUPS courses will be taught by lecturers in categories 6 and 8 of section 6.9, for whom a call for expressions of interest will be issued by ELKE APTH.

No	School	Surname	First	Grade	Employment Relationship	Field of Study (*according to the Government Gazette of Appointment*)	Courses Taught (in the XPP)
1	Agriculture	ALEXANDRIDIS	THOMAS	PROFESSOR	PERMANENT EMPLOYEE, A.U.TH.	TELESCOPING AND GEOGRAPHICAL INFORMATION SYSTEMS IN AGRICULTURE	Earth Observation and Geoinformation for Agrifood Systems, Precision Agriculture and Livestock Farming
2	Agriculture	APOSTOLIDIS	APOSTOLOS	PROFESSOR	PERMANENT EMPLOYEE OF A.U.TH.	FISH FARMING WITH EMPHASIS ON FISH GENETICS	Principles of Genetics, Sustainable aquaculture and fisheries
3	Agriculture	GEORGIOS	PANTASIS	PROFESSOR	PERMANENT EMPLOYEE OF A.U.TH.	IRRIGATION WATER MANAGEMENT AND IRRIGATION	Agrometeorology, Water Resources and Irrigation Engineering
4	Agriculture	GOLIA	EVANGELIA	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	SOIL SCIENCE	Soil Science
5	Agriculture	GOULA	ATHANASIA	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	FOOD SCIENCE - DESIGN AND OPTIMISATION OF FOOD PROCESSING PROCESSES	Food Engineering
6	Agriculture	DORDAS	CHRISTOS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	AGRICULTURE-LARGE-SCALE CROPS	Physics applied in the agrifood sector, sustainable field crop production, plant physiology, organic agriculture
7	Agriculture	KARAGLANIDIS	GEORGIOS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	PLANT PATHOLOGY-MYCOLOGY	Plant Pathology
8	Agriculture	KARPOUSOS	DIMITRIOS	PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	OPTIMISATION OF IRRIGATION NETWORKS AND WATER RESOURCE SYSTEMS	Computer Programming and Optimisation Methods, Water Resources and Irrigation Engineering
9	Agriculture	KATSANIDIS	EVGENIOS	PROFESSOR	PERMANENT EMPLOYEE, A.U.TH.	FOOD SCIENCE - MEAT AND FISHERY TECHNOLOGY	Food Processing and Preservation
10	Agriculture	KOUKOUNARAS	ATHANASIOS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	VEGETABLE CROP PRODUCTION	Vegetable crop production
11	Agriculture	KOUKOUSIS	NIKOLAOS	PROFESSOR	PERMANENT EMPLOYEE, A.U.TH.	INSECTS AND MITES OF FRUIT TREES	Entomology Applied in Agriculture,
12	Agriculture	KUNDURAS	STEPHANOS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	VITICULTURE	Viticulture
13	Agriculture	KOTSOPOULOS	THOMAS	PROFESSOR	PERMANENT EMPLOYEE, A.U.TH.	AGRICULTURAL CONSTRUCTIONS WITH EMPHASIS ON ENERGY DESIGN OF ANIMAL WASTE MANAGEMENT FACILITIES	Controlled Environment Systems (LIVESTOCK AND PLANTS), Precision Agriculture and Livestock Farming, Renewable Energy Resources in Agriculture, Mediterranean

							Biodiversity, Climate Change and Circular Economy
14	Agriculture	LAGOPODI	ANASTASIA	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	PLANT PATHOLOGY	Plant Pathology
15	Agriculture	LAZARIDOU	ATHENS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	FOOD SCIENCE-FOOD PHYSICAL CHEMISTRY	Physics applied in the agrifood sector
16	Agriculture	MALIOGA	BARBARA	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	PLANT PATHOLOGY-VIROLOGY	Plant Pathology
17	Agriculture	MAMOLOS	ANDREAS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	PLANT ECOLOGY	Mediterranean Biodiversity, Climate Change and Circular Economy, Ecology
18	Agriculture	MAVROMATIS	ATHANASIOS	PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	CELL GENETICS AND PLANT IMPROVEMENT	Principles of Genetics, Breeding & Plant Propagation
19	Agriculture	MENEXES	GEORGIOS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	BIOMETRICS AND AGRICULTURAL EXPERIMENTATION	Calculus for Agriculture and Food Science, Statistics and Biometry
20	Agriculture	MICHALIDIS	ANASTASIOS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	AGRICULTURAL APPLICATIONS	Bioethics, Governance and Animal Welfare in Agri-Food Systems, Entrepreneurship and Social Innovation in the Agrifood Sector
21	Agriculture	MICHALIDIS	GEORGIOS	PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	PHYSIOLOGY OF REPRODUCTION OF MONOGASTRIANS	Physiology of reproduction of farm animals
22	Agriculture	MICHALIDOU	ALEXANDRA-MARIA	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	FOOD SCIENCE AND NUTRITION	Nutrition and Metabolism with Mediterranean Diet Insights, Mediterranean and Functional Foods
23	Agriculture	MOLASIOTIS	ATHANASIOS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	ARBORICULTURE	Principles of Modern Fruit Science
24	Agriculture	MOSCHAKIS	THOMAS	PROFESSOR	PERMANENT EMPLOYEE, A.U.TH.	SCIENCE OF MILK, MILK PRODUCTS AND COLLOIDAL FOODS	Food Processing and Preservation
25	Agriculture	BOSIS	IOANNIS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	ANIMAL HUSBANDRY-MILK PRODUCTION OF SMALL RUMINANTS	Introduction to animal husbandry and farm management
26	Agriculture	BOURNARIS	THOMAS	PROFESSOR	PERMANENT EMPLOYEE, A.U.TH.	AGRICULTURAL ECONOMICS-AGRICULTURAL BUSINESS MANAGEMENT	Informatics, Farm Management, Farm Accounting

27	Agriculture	NASTIS	STEPHANOS	PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	AGRICULTURAL ECONOMICS-AGRICULTURAL ECONOMIC DEVELOPMENT	Farm Management, Farm Accounting
28	Agriculture	PARTALIDOU	MARIA	PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	AGRICULTURAL SOCIOLOGY-AGROTOURISM	The sociology of food: cultural and social dimensions of Mediterranean Gastronomy, Entrepreneurship and Social Innovation in the Agrifood Sector
29	Agriculture	SERGAKI	PANAGIOTA	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	AGRICULTURAL COOPERATION	Bioethics, Governance and Animal Welfare in Agri-Food Systems, Agricultural Economics, Agricultural Governance: Policy Instruments and Sustainable Cooperative Models, Entrepreneurship and Social Innovation in the Agrifood Sector, Agrifood Marketing, Consumer and Sustainability
30	Agriculture	TANANAKI	CHRYSOULA	PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	BEEKEEPING-QUALITY ASSURANCE OF HIVE PRODUCTS	Apiculture and bee products
31	Agriculture	TSAKIRIDOU	Euthymia	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	AGRICULTURAL AND FOOD TRADE	Agricultural Economics, Agricultural Governance: Policy Instruments and Sustainable Cooperative Models, Agrifood Marketing, Consumer and Sustainability
32	Agriculture	TSIALTAS	IOANNIS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	AGRICULTURE-APPLIED PHYSIOLOGY OF LARGE-SCALE CROPS	Sustainable Field Crop Production, Organic Agriculture
33	Agriculture	YPSILANTIS	IOANNIS	PROFESSOR	PERMANENT EMPLOYEE, A.U.TH.	SOIL SCIENCE-SOIL MICROBIOLOGY	Physics applied in the agrifood sector, Soil Science
34	Agriculture	FRAGKOS	VASILEIOS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	AGRICULTURAL ENGINEERING-PUMPS	Calculus for Agriculture and Food Science, Digital Systems in Agriculture
35	Agriculture	VATZIAS	GEORGIOS	ASSOCIATE PROFESSOR	PERMANENT EMPLOYEE OF A.U.TH.	PIG REPRODUCTION	Governance, Bioethics and Animal Welfare in Agri-Food Systems,
36	Agriculture	VRYZAS	ZISIS	ASSOCIATE PROFESSOR	PERMANENT EMPLOYEE OF A.U.TH.	AGRICULTURAL PHARMACOLOGY	Principles of Pesticides
37	Agriculture	KAPRANAS	APOSTOLOS	ASSOCIATE PROFESSOR	PERMANENT EMPLOYEE OF A.U.TH.	AGRICULTURAL ENTOMOLOGY-BIOLOGICAL INSECT CONTROL	Entomology Applied in Agriculture,
38	Agriculture	Mourtzinos	IOANNIS	ASSOCIATE PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	CHEMISTRY AND INSTRUMENTAL ANALYSIS OF FOOD	Mediterranean and Functional Foods

39	Agriculture	DOTAS	VASILEIOS	ASSOCIATE PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	FARM ANIMAL NUTRITION	Intelligent Animal Nutrition
40	Agriculture	ORDOUDI	STERGIANI	ASSOCIATE PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	FOOD SCIENCE-OENOLOGY AND SPIRIT DRINKS	Sustainable Oenology and Wine Production
41	Agriculture	PANTASI	XANTHOULA-IRINI	ASSOCIATE PROFESSOR	PERMANENT EMPLOYEE OF A.U.TH.	AUTOMATION IN AGRICULTURE	Calculus for Agriculture and Food Science, Digital Systems in Agriculture, Precision Agriculture and Livestock Farming
42	Agriculture	TSOUVALTZIS	PAVLOS	ASSOCIATE PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	VEGETABLE CROP PRODUCTION	Vegetable crop production
43	Agriculture	HATZILAZAROU	STEPHANOS	ASSOCIATE PROFESSOR	PERMANENT EMPLOYEE, A.U.TH.	FLORICULTURE	New Trends in Floriculture
44	Agriculture	PANAGOPOULOS	IOANNIS	PERMANENT ASSISTANT PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	AGRICULTURAL HYDRAULICS AND ENVIRONMENTAL HYDROLOGY	Water Resources and Irrigation Engineering
45	Agriculture	BASDAGIANNI	ZOITSA	PERMANENT ASSISTANT PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	ANIMAL HUSBANDRY-REARING OF RUMINANTS	Introduction to animal husbandry and farm management
46	Agriculture	NATOS	DIMITRIOS	PERMANENT ASSISTANT PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	AGRICULTURAL POLICY	Agricultural Economics, Agricultural Governance: Policy Instruments and Sustainable Cooperative Models, Agrifood Marketing, Consumer and Sustainability
47	Agriculture	MATTAS	KONSTANTINOS	HONORARY PROFESSOR, A.U.Th.	PENSIONER	AGRICULTURAL POLICY	Agricultural Economics, Agricultural Governance: Policy Instruments and Sustainable Cooperative Models, Agrifood Marketing, Consumer and Sustainability
48	Agriculture	BILIADERIS	KONSTANTINOS	HONORARY PROFESSOR, A.U.Th.	PENSIONER	CHEMISTRY – FOOD PHYSICAL CHEMISTRY	Physics applied in the agrifood sector, Nutrition and Metabolism with Mediterranean Diet Insights, Mediterranean and Functional Foods
49	Agriculture	ANASTASIOS	EVANGELOS	ASSISTANT PROFESSOR	TEMPORARY EMPLOYEE A.P.Th.	AGRICULTURAL MECHANICAL ENGINEERING	Digital Systems in Agriculture, Precision Agriculture and Livestock Farming
50	Agriculture	GIANTSIS	IOANNIS	ASSISTANT PROFESSOR	TEMPORARY EMPLOYEE A.P.Th.	Molecular Genetics and Management of Vertebrate and Invertebrate Animal Organisms	Principles of Genetics, Sustainable aquaculture and fisheries, Mediterranean Biodiversity, Climate Change and Circular Economy
51	Agriculture	Doulgerakis	AGAPI	ASSISTANT PROFESSOR	TEMPORARY EMPLOYEE A.P.Th.	FOOD MICROBIOLOGY	General and Food Microbiology Advanced Food Microbiology and Quality Assurance Systems

52	Agriculture	KATI	VAYA	ASSISTANT PROFESSOR	TEMPORARY EMPLOYEE A.P.Th.	WEED SCIENCE	Sustainable Field Crop Production, Organic Agriculture
53	Agriculture	KOUDOUNAS	KONSTANTINOS	ASSISTANT PROFESSOR	TEMPORARY EMPLOYEE A.P.Th.	BIOCEMISTRY	Living Systems and Molecular Biology, Plant Physiology E, Biochemistry E
54	Agriculture	MICHALIDIS	MICHALIS	ASSISTANT PROFESSOR	TEMPORARY EMPLOYEE A.P.Th.	ARBORICULTURE	Principles of Modern Fruit Science
55	Agriculture	FOTIDIS	IOANNIS	ASSISTANT PROFESSOR	TEMPORARY EMPLOYEE, A.U.Th.	RENEWABLE ENERGY SOURCES IN AGRICULTURE	Controlled Environment Systems (LIVESTOCK AND PLANTS), Renewable Energy Resources in Agriculture
56	Agriculture	CHARATSARI	CHRYSANTHI	ASSISTANT PROFESSOR	TEMPORARY EMPLOYEE A.P.Th.	AGRICULTURAL EDUCATION – TRAINING	Entrepreneurship and Social Innovation in the Agrifood Sector
57	Agriculture	ATHANASIADOU	ELENI	EDIP	PERMANENT EMPLOYEE, A.U.Th.	LANDSCAPE ARCHITECTURE	Landscape architecture
58	Agriculture	DIMITRIADOU	ELENI	EDIP	PERMANENT EMPLOYEE OF A.U.TH.	AGRICULTURAL PRODUCTION AND AGROTOURISM ECONOMICS	Entrepreneurship and Social Innovation in the Agrifood Sector, Farm Management, Farm Accounting
59	Agriculture	Koutsos	THOMAS	EDIP	PERMANENT EMPLOYEE, A.U.Th.	GEOSPATIAL INFORMATION IN AGRICULTURE	Earth Observation and Geoinformation for Agrifood Systems, Precision Agriculture and Livestock Farming
60	Agriculture	KOSTAS	STEFANOS	EDIP	PERMANENT EMPLOYEE OF A.U.TH.	FLORICULTURE	New Trends in Floriculture
61	Agriculture	TSAKIRIS	MEROPI	EDIP	PERMANENT EMPLOYEE OF A.U.TH.	AGRICULTURAL POLICY	Agricultural Economics, Agricultural Governance: Policy Instruments and Sustainable Cooperative Models
62	Agriculture	TSAMPOULA	ANGELIKI	EDIP	PERMANENT EMPLOYEE OF A.U.TH.	POLLUTION AND PROTECTION OF THE AGRICULTURAL ENVIRONMENT	Ecology
63	Chemistry	THEODORIDIS	GEORGIOS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	ANALYTICAL CHEMISTRY	General Chemistry, Food Analysis
64	Chemistry	KARAPANTSIOS	THEODOROS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	General Chemical Technology	Industrial Process Design and Economics

65	Chemistry	MANZOURIDOU	FANI	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	FOOD CHEMISTRY AND BIOTECHNOLOGY	Food Chemistry, Food Biotechnology
66	Chemistry	PARASKEVOPOULOU	ADAMANTINI	PROFESSOR	PERMANENT EMPLOYEE A.P.Th.	FOOD CHEMISTRY AND TECHNOLOGY	Food Chemistry, Food Analysis,
68	Chemistry	PSOMAS	GEORGIOS	PROFESSOR	PERMANENT EMPLOYEE A.U.Th.	INORGANIC CHEMISTRY	General Chemistry
69	Chemistry	NENADIS	NIKOLAOS	ASSOCIATE PROFESSOR	PERMANENT EMPLOYEE OF A.U.TH.	FOOD CHEMISTRY AND TECHNOLOGY	Food Chemistry, Food Analysis
70	Chemistry	HATZIDIMITRIOU	EUPHIMIA	PERMANENT ASSISTANT PROFESSOR	PERMANENT EMPLOYEE, A.U.Th.	Chemistry and Technology of Wine and Alcoholic Beverages	Sustainable Oenology and Wine Production, Food Biotechnology
71	Chemistry	KALOGIOURI	NATASA	ASSISTANT PROFESSOR	TEMPORARY EMPLOYEE A.P.Th.	ANALYTICAL CHEMISTRY	General Chemistry
72	Chemistry	MATSAKIDOU	ANTHIA	ASSISTANT PROFESSOR	TEMPORARY EMPLOYEE A.P.Th.	CHEMISTRY AND FOOD TECHNOLOGY	General Chemistry, Advanced Food Microbiology and Quality Assurance Systems

7. Career prospects for graduates

Indicatively, these include:

- Large and reputable agricultural and livestock farms and businesses (plant, animal or mixed production).
- Cooperative organisations, producer groups and interprofessional organisations.
- Cooperative or private companies producing and standardising animal feed mixtures, feed additives, supplements and balancers.
- Industries and units for the processing, manufacturing and management of agricultural products with large capacities.
- Companies producing organic products, integrated management products and biotechnological applications.
- In companies or agencies involved in the import or export, production, manufacture and marketing of all types of pesticides and biological control products, fertilisers, as well as import or export, production and marketing of all types of plant or animal propagating or nursery material, as well as research work, experimental and demonstrative applications.
- Nurseries, greenhouses, apiaries, silkworm breeding units and high-tech agricultural enterprises.
- Certification bodies, quality control laboratories and research centres.
- Banks, organisations and companies that finance, study or manage projects and investments in the agricultural sector.
- Public bodies and private companies that implement Community or national agricultural and regional development programmes.
- The supply of agricultural machinery and the construction of agricultural facilities, provided that the supply or construction is carried out with loans, subsidies or state programmes.
- Expert reports, damage assessments and certifications of suitability of agricultural products, animals and materials.
- Water resource management projects, land improvement, irrigation and drainage projects, environmental impact studies and rural area restoration.
- Food industries
- Studies and applications for the creation, management and aesthetic design of green spaces and landscaping projects.
- Preparation of programmes and studies for the development of agricultural and livestock farms, ecotourism, environmental management, spatial and urban planning.

Studies and project implementation: development and construction of landscaping and irrigation projects, water resource management, as well as the organisation and operation of agricultural and livestock facilities and industries that process agricultural and livestock products. It also participates in waste study and management, pasture management and habitat study, as well as in the drafting of operational plans to maximise agricultural income and improve productivity. It also drafts and signs waste management studies (collection, processing, disposal) for agricultural and livestock units and monitors the faithful implementation of these studies during the construction phase of the necessary facilities and their proper operation. In addition, involvement in the drafting of spatial, environmental and economic studies concerning the development and organisation of rural areas, the

creation of green spaces, environmental protection and the use of modern technologies such as remote sensing and geographic information systems. It is also involved in studies on erosion control, the use of renewable energy sources and the assessment of irrigation water quality, ensuring the proper management and sustainability of agricultural resources and infrastructure.