

1. Insect Pathology and Innate Immunology / 3 hours, 3 credit

Understand insect bacteria, viruses, and fungal diseases, and learn the self-defense system of insects that survive only with innate immunity without acquired immunity

2. Insect Physiology / 3 hours, 3 credits

Exclusive content learning on the internal and external structure and physiological characteristics of insects

3. Insect Biotechnology / 3 hours, 3 credits

Development of expression vectors to use insects as biological factories, use them as tools for producing useful substances through cell lines and introduction into insect organisms, and learn about the discovery and characteristic analysis of various useful functional genes derived from insects

4. Introduction of Entomology / 4 hours, 3 credits

Develop basic knowledge of insect origin, external structure characteristics, ecological characteristics, and various industrial uses

5. Relational Database / 3 hours, 3 credits

Subjects to study how to build and interpret relational databases to understand the IT convergence agri-food industry

6. International Food and Agricultural Industries / 3 hours, 3 credits

A subject that examines and discusses the current status and prospects of the food industry in the international community, various political, social, cultural, and anthropological relationships with food, and considers our path

7. Functional Entomology and Practice / 4 hours, 3 credits

Development of the latest research status and related knowledge on various functional substances derived from insects

8. Screening of Functional Biomaterials / 3 hours, 3 credits

Study on functional materials and techniques for discovering them in bio-derived health and food fields

9. Functional Food Science and Practice / 4 hours, 3 credits

Develop and acquire techniques for planning, designing, processing and designing food using functional materials

10. Basic Industrial Entomology and Practice / 4 hours, 3 credits

Understand the general concept of insect breeding and learn the overall contents of breeding based on the ecological characteristics of representative insects for each use

11. Basic Bio-statistics / 3 hours, 3 credits

Basic subjects for developing data convergence understanding

12. Integrative ICT Strategies in Food and Agricultural Industries / 3 hours, 3 credits

Subjects to study ICT-combined platforms and systems in the production, distribution, and consumption of the agri-food industry

13. Current Issues on the Food and Agricultural Industries / 3 hours, 3 credits

Data management-level subjects to analyze crops, fisheries, insects, and food sectors as examples and to explore development goals

14. Alternative Medicine / 3 hours, 3 credits

Introduction of traditional and private medical information, not institutional medical systems, at the national level

15. Immunology / 3 hours, 3 credits

Systematically educate basic immunological knowledge such as the characteristics of immunity and specific and non-specific immune responses to understand the immune system of aquatic animals

16. Aquatic Microbiology and Experiment / 4 hours, 3 credits

Overall basic knowledge of microorganisms such as general concepts, properties, forms, and classification, as well as physiology, pathogenic mechanisms, development processes, and infection characteristics of various microorganisms that cause actual fish diseases through theory and experiment

17. Molecular Biology and Experiment 1, 2 / 3 hours, 3 credits

Learn the overall transcription, translation, and post-translation transformation from genes

18. Big data analysis / 3 hours, 3 credits

The subjects include smart farm planning, design, database, and software, and study how to analyze big data produced through smart farm operation and interpret production, distribution, and consumer orientation

19. Feed Nutrition / 3 hours, 3 credits

Identifying the nutritional characteristics of each insect and learning the contents of the production of feed applicable to fish, livestock, and pets

20. Screening of Bio-active Natural Products / 3 hours, 3 credits

Acquiring knowledge of the effective activity search of natural materials

21. Genetics for Biological Industries / 3 hours, 3 credits

Learning theories related to the genetics of animals and plants and utilizing and applying genetic principles in the life industry (genetics)

22. Bioinformatics / 3 hours, 3 credits

Programs, genetics, and molecular biology are subjects for understanding genomes and genetic systems

23. Biochemistry 1, 2 / 3 hours, 3 credits

Basic learning on the composition and metabolic principles of basic substances that make up living things

24. Aquatic Animal Reproduction and Experiment / 4 hours, 3 credits

To understand the reproduction mechanism of aquatic animals, lectures on the phenomenon of fish maturity, fertilization, occurrence, and growth, and based on this, the acquisition and application of techniques for inducing mother maturity and spawning to improve aquaculture productivity

25. Aquatic Animal Aquaculture / 3 hours, 3 credits

Training on practical aquaculture technologies such as environmental, feed, transport, and livestock necessary for aquaculture technology, aquaculture methods for aquatic animals, seedling production and cultivation, etc

26. Aquatic Disease Popylaxis / 3 hours, 3 credits

Acquiring smart fisheries culture prevention source technology by utilizing the types of marine culture biological diseases that occur in the actual field, infection mechanisms by pathogen, and advanced preventive vaccines

27. Aquatic Biology and Experiment / 4 hours, 3 credits

A lively education through practical training by lecturing on the overall basic field of aquatic life, which is a future life resource

28. Integrative Biological Sciences and Industry Practice / 4 hours, 3 credits

Discover various ideas and creative challenges that combine smart technology with various biological industries learned in the major course

29. Smartfarm Planning and Design / 4 hours, 3 credits

Designing a system that meets the business plans and goals of Smart Farm and Aqua Farm

30. Plant Physiology / 3 hours, 3 credits

Subjects to study basic principles of plant growth, generation, reproduction, and interaction with the environment, etc

31. Plant Life Sciences and Practice (Crop Biology) / 4 hours, 3 credits

Subjects to learn theories and techniques for the efficient production of plants (edible crop science)

32. Crop System and Environments / 3 hours, 3 credits

Subjects to study and apply the importance, role, and environmental control of the environment in plant cultivation, such as climate change, lack of resources, and increase in pests

33. Food Industry / 3 hours, 3 credits

Subjects to study the present and relationship between production, economy, management, policy, and culture of the agri-food industry

34. Algorithm and Practice / 4 hours, 3 credits

Objectives for Big Data Analysis and Software Development – Subjects for Algorithm Design and Practice

35. Aquaculture System Engineering / 3 hours, 3 credits

Comprehensive understanding of mechanical, environmental, material, and monitoring techniques required to design and build various aquaculture systems such as smart aquaculture system, circulation filtration system, bioflock, water flow system, water flow system, water flow system, water supply system, and open sea cage

36. Aquatic environment / 3 hours, 3 credits

Measures to improve the aquaculture environment and education on environmental conservation through aquaculture production ecosystem, material circulation, water quality and low quality, self-pollution, self-purification, environmental investigation, etc

37. Aquatic Physiology / 3 hours, 3 credits

Subjects that understand the physiological characteristics and functions of the cells, tissues, organs and organs of aquatic animals and explain their related mechanisms

38. Organic Chemistry / 3 hours, 3 credits

the study of the basic chemical principles of living things

39. Analytical Chemistry for Integrative Sciences / 3 hours, 3 credits

Study basic and applied analysis and interpretation methods for convergence studies focusing on various materials covered by the Smart Life Industry Convergence Department

40. Biology 1,2 / 3 hours, 3 credits

a basic subject for general understanding of biology

41. Resource Plant Biology / 3 hours, 3 credits

Study the classification and utilization of plants as various resources useful to us

42. Independent Study and Career Skills/ Senior Project 1,2 / 1 hour, 1 credit

Designing a start-up based on the learning contents of the major field

43. Seed Science and Plant Breeding 1,2 / 4 hours, 3 credits

Subjects to learn the concept of seeds, germination principles, seed development, seed management, etc. (plant breeding, seed management, etc.)

44. Natural Product Chemistry and Experiment 1,2 / 4 hours, 3 credits

Experiments on the method of refining and determining the structure of natural substances such as acquisition of general methods of actual use using natural materials, extraction for actual use of natural substances, fractions, and isolation of active ingredients

45. Statistical Genetics / 3 hours, 3 credits

Subjects that combine statistical theories to understand the genetic phenomena of living things separately from the environment and to study the complexity of genes involved

46. Application of Active Natural Product Database / 4 hours, 3 credits

Training on various applications based on a database of natural materials and information obtained using them