POLYTECHNIC OF RIJEKA
AGRICULTURAL DEPARTMENT

PROGRAMME OF STUDY

PROFESSIONAL STUDY OF MEDITERRANEAN AGRICULTURE

- **3.1 LIST OF COURSES**

Professional Study of Mediterranean Agriculture

1st year of study – Semester I (Winter Semester)

Course unit no.	Title of the course unit	Hours weekly				ECTS credits	Exam
		L	S	E	P		
1	Chemistry	2	-	1	-	4	1
2	Botany and basics of genetics	3	-	1	-	5	1
3	Applying IT in agriculture	1	-	2	-	3	1
4	Mathematics and statistics	2	-	2	-	5	1
5	Basics of soil cultivation	3	-	2	-	6	1
6	Agricultural ecology	3	-	-	-	4	1
7	Foreign language I	1	-	1	-	3	1
8	Physical Education	-	-	(2)	-	-	-
	Total / Semester	**15**	**-**	**9**	**-**	**30**	**7**

Note: 1) L – lecture, S – seminar, E – exercise, P – practical
2) Students can choose one of the following foreign languages: English and Italian
3) Physical Education is performed out of time-table

1st year of study – Semester II (Summer Semester)

Course unit no.	Title of the course unit	Hours weekly				ECTS credits	Exam
		L	S	E	P		
9	Biochemistry	2	-	1	-	5	1
10	Soil science	2	-	1	1	4	1
11	Plant protection I	2	-	1	1	4	1
12	Physiology of plants	2	-	1	-	5	1
13	Machines in agriculture	2	-	2	2	5	1
14	Foreign language II	1	-	1	-	3	1
8	Physical Education	-	-	(2)	-	-	-
	Optional course A	2	-	1	-	4	1
	Total / Semester	**13**	**-**	**8**	**4**	**30**	**7**

Note: Student chooses one of the available optional courses:
15 Agroclimatology
16 Agrarian microbiology

2nd year of study – Semester III (Winter Semester)

Course unit no.	Title of the course unit	Hours weekly				ECTS credits	Exam
		L	S	E	P		
17	Plant protection II	2	-	2	-	4	1
18	Mediterranean fruit growing I	3	-	1	1	6	1
19	Vine growing I	2	-	1	2	4	1
26	Olive growing	2	-	1	2	6	1
24	Mediterranean livestock farming	2	-	1	-	4	1
21	Foreign language III	1	-	1	-	3	1
	Optional course B	2	-	1	-	4	1
	Total / Semester	**14**	**-**	**8**	**5**	**31**	**7**

Note: Student chooses one of the available optional courses:
22 Market in agriculture
23 Seed production

2nd year of study – Semester IV (Summer Semester)

Course unit no.	Title of the course unit	Hours weekly				ECTS credits	Exam
		L	S	E	P		
25	Mediterranean fruit growing II	2	-	2	1	7	1
20	Growing of vegetables	3	-	2	1	5	1
27	Vine growing II	2	-	1	2	5	1
28	Wine making I	2	-	1	2	5	1
29	Foreign language IV	1	-	1	-	3	1
	Optional course C	2	-	1	-	4	1
	Total / Semester	**12**	**-**	**6**	**6**	**29**	**6**

Note: Student chooses one of the available optional courses:

30 Beekeeping
31 Fishery
32 Farm premises

3rd year of study – Semester V (Winter Semester)

Course unit no.	Title of the course unit	Hours weekly				ECTS credits	Exam
		L	S	E	P		
33	Olive processing	2	-	2	1	6	1
34	Wine making II	2	-	1	2	5	1
35	Plant growing in protected areas	2	-	2	1	6	1
42	Irrigation	2	-	1	1	4	1
	Optional course D	2	-	1	-	4	1
	Optional course E	2	-	1	-	4	1
	Total / Semester	**12**	**-**	**8**	**5**	**29**	**6**

Note: Student chooses two of the available optional courses::

37 Plant housing
38 Special and sparkling wines
39 Agricultural business economics
40 Floriculture and dendrology basics

3rd year of study – Semester VI (Summer Semester)

Course unit no.	Title of the course unit	Hours weekly				ECTS credits	Exam
		L	S	E	P		
41	Management of agricultural holdings	2	-	1	-	3	1
36	Preservation of agricultural products	2	-	1	-	5	
	Optional course F	2	-	1	-	4	1
	Optional course G	2	-	1	-	4	1
47	Bachelor paper	-	-	(x)	-	15	1
	Total / Semester	**8**	**-**	**4**	**-**	**31**	**5**

Note: Student chooses two of the available optional courses:

43 Aromatic and medicinal plants
44 Landscape architecture
45 Rural forms of tourism
46 Business analysis

Total – entire curriculum of Professional Study of Mediterranean Agriculture

Semester	Hours weekly					ECTS credits	Exam
	L	S	E	P	Total		
Semester I	225	-	135	-	360	30	7
Semester II	195	-	120	60	375	30	7
Semester III	210	-	120	75	405	31	6
Semester IV	180	-	90	90	360	29	6
Semester V	180	-	120	75	375	29	6
Semester VI	120	-	60	15	195	31	5
Total at the study	**1110**	**-**	**645**	**315**	**2070**	**180**	**37**

Through studies, students attend 1980 teaching hours (total) and, after fulfilling all studying obligations, they gather 180 ECTS credits (total).

CHEMISTRY | **Course unit number: 01**

Hours weekly 2+0+1+0/I | **ECTS credits: 4**

Syllabus outline

Introduction to chemistry: matter and its chemical transitions. Structure of an atom and periodical system of elements. Chemical laws of bonding related to mass and volume. Characteristics of solid matter, liquid and gaseous substances. The relative atomic and molecular mass and definition of mol as a measure of matter quantity. The chemical bond and structure of molecules. Types of solutions and quantitative definitions of their content. Colloids, electrolytes, acids and bases. pH of solution and buffers. Methods of purification and chemical analysis used in vine and olive oil production technology. Types of chemical reactions. Redox-reactions and redox potential of vine. The equilibrium, velocity and energetic of chemical reactions. Chemical composition of earth and biogenic elements. Properties of important elements and compounds used in viticulture and vine and olive oil production. Types and properties of hydrocarbons. Organic compounds with different functional groups: composition and properties. Common organic compounds found in main Mediterranean growing plants and agriculture products.

Developing of general and specific competence (knowledge and skills)

Students will develop the knowledge on structure and changes of chemical compounds during reactions. Compounds and reactions used in production of main Mediterranean growing plants will be discussed. Exercises develop the ability to solve numeric problems and introduce students to experimental work.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

BOTANY AND BASICS OF GENETICS | **Course unit number: 02**

Hours weekly: 3+0+1+0/I **ECTS credits: 5**

Syllabus outline

Introduction into Botany – features of lively beings; differences between plants and animals; importance of plants in the environment and in man' s life; botany and its division. Cytology – cell structure. Morphological levels of organisation. Histology – constitute and material cells. Anatomy and morphology of vegetative organs. Anatomy and morphology of generative organs. Plant multiplication. Systematic descriptions – systematic categories and nomenclature; systematic descriptions of lower-order ones – bacteria, algae, fungi and lichens – emphasis on plant parasites and those of higher-order plants (moss, ferns, spermatophyta) – including survey of families of cultivated plants belonging to monocotyledons and dicotyledons and weed.
Exercises: Microscope and its use; Structure of epidermal cell of onion. Cell colonies and germination – yeasts; Anatomic structure of annual and biennial vine stalk. Anatomic structure of vine leaf and root. Vine bud in longitudinal section. Flower and inflorescence of vine. Fruit and seed of vine. Morphological

Development of general and specific competence (knowledge and skills)

To be knowledgeable about structure of plants and their ability to change due to certain outdoor factors, enabling influence on plants (very important in plant production). In exercises, to get practised with use of microscope and how to prepare microscopic preparations, and be familiar with anatomy of vine and yeasts.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

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APPLYING IT IN AGRICULTURE | **Course number: 03**

Hours weekly: 1+0+2+0/I **ECTS credits: 3**

Syllabus outline

Units which will be analyzed are: the notion of informatics, information, information technology and information society; computer system; computer programs; organization and data processing; multimedia; information systems in the agriculture; computer networks; Internet; security of programs and data; ergonomics and the use of computers.

Development of general and specific competence (knowledge and skills)

Informing students with the basic principles of the establishment and functioning of computer and information systems. Managing to work at computers using software applications which are most used in business processing, especially in the agricultural complex and Internet surrounding.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

MATHEMATICS WITH STATISTICS | **Course number: 04**

Hours weekly: 2+0+2+0/I **ECTS credits: 5**

Syllabus outline

Functions: term and features, composition of function, inverse function, elementary functions and their graphs, marginal value and continuity of functions, asymptotes.
Derivations: definition and geometrical meaning of derivation, rules of deriving, derivations of elementary functions, higher-order derivations, differential of function, L'Hospital's rule, extremes and inflection points, flow of function, economic application of derivation.
Economic and financial maths: percentage and per mil calculi; rule of three, recursive calculus, division calculus, composition calculus, interest account, periodical sums, loan service.
Descriptive statistics: distribution of frequencies, inductive and deductive methods, average values; dispersion measures, asymmetry and flatness.
Correlation and regression: method of smallest squares, linear regression, linear correlation.

Development of general and specific competence (knowledge and skills)

Enable students to use mathematical and statistical disciplines for better understanding other courses during their tertiary education and for solving concrete problems afterward graduating.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

BASICS OF SOIL CULTIVATION | **Course number: 05**

Hours weekly 3+0+2+0/ I **ECTS credits: 6**

Syllabus outlines

Introduction. Characteristics of plant growing. Agricultural production areas – agro-sphere. Ecological factors of plant growing. Climate - atmospheric phytoecological factors. Agricultural soil - edaphic phytoecological factors. Physical components of soil fertility. Chemical components of soil fertility. Soil as natural resource in plant growing. Soil cultivation zoning in Croatia and agroecological zones. Plant growing interventions. Tillage. Soil fertilisation. Corrections of acid and alkalic soils. Damages and protection of soil. Cultivated plant. Biology of cultivated plants. Seeding. Care of crops. Yield as growing aim. Systems of soil cultivation in Mediterranean region. Alternative agriculture in Mediterranean region (ecological systems of plant growing).

Development of general and specific competence (knowledge and skills)

Students are expected to have new insights into plant growing practices in order to follow professional course easier in next terms.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

AGRICULTURAL ECOLOGY | **Course unit number: 06**

Hours weekly: 3+0+0+0/I **ECTS credits: 4**

Syllabus outline

Ecology as interdisciplinary science. Basic ecological terms. Matter cycles and energy flows in ecosystem. Food chains.
Ecosphere and its components. Man's impact on environment. World biomes. Biodiversity and agents of its reduction. Sustainable growth and ecological efficiency. Abiotic and biotic interacting components. Biological tolerance.
Agrosphere. Critical points of agrosphere. Organic agriculture. Agroecological indicators. IFOAM. Ecological agents of pest control. Chemicals for plant protection allowed in EU organic agriculture.
Mediterranean biome and its transformation in agrosystem. Critical points of Mediterranean biome. Ecology of main Mediterranean fruit-trees. Autochthonous and allochthonous Mediterranean vegetables and their ecology. Mediterranean spice plants.

Development of general and specific competence (knowledge and skills)

After following this course, students should be aware of how to preserve agrobiotope. Besides, they should be theoretically qualified to pass from conventional to organic agriculture.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

ENGLISH I | **Course number: 07**

Hours weekly: 1+0+1+0 / I **ECTS credits: 3**

Syllabus outline

Primarily based on linguistic issues covering the following grammar units that are the most important in understanding written or oral language, such as: parts of speech, word derivation; system of basic tenses (active and passive), sequence of tenses; indirect speech; modals; conditional clauses.

Development of general and specific skills (knowledge and skills)

Systematic practice on the above stated grammar structures in real speaking contexts and on writing different types of tasks (translation, abstract, note taking)

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

ITALIAN I | **Course number: 07**

Hours weekly: 1+0+1+0/I **ECTS credits: 3**

Syllabus outline

ESP – vocabulary and structures.
Exercises include: Tense System – Active Voice (presente, passato prossimo, futuro semplice, anteriore). Personal pronouns. Possessives. Sequence of tenses. Modals. Compound words and word derivation.

Lectures selected from the following professional contents: soil science and plant nutrition, viniculture, olive growing, plant protection, wine making, agroclimatology, fruit growing, growing of vegetables, agrotourism.

Preparation of materials for seminar papers: selected professional terminology and issues covering wine making and viniculture.

Development of general and specific competence (knowledge and skills)

Independent reading and making comments on agricultural texts. Acquiring grammar knowledge as pre-requisite for correct written and oral ways of expressing.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

PHYSICAL EDUCATION | **Course unit number: 08**

Hours weekly: 0+0+2+0 / I, 0+0+2+0 / II **ECTS credits: -**

Syllabus outline

Classes are held in fitness center and as outdoor running exercises (cross country).
Through exercises students become aware of the importance of regular exercising.
Students also acquire basic information about physical education which has great influence on general heath, on capacity for work and defense mechanisms.
The above mentioned elements influence the development of functional and motoric ability as well as conative and cognitive characteristics of the human body.

Development of general and specific competence (knowledge and skills)

Students gain knowledge and develop skills in physical education to satisfy biological and psychosocial need for movement.

Types of classes and methods of assessment

BIOCHEMISTRY | **Course unit number: 09**

Hours weekly: 2+0+1+0/II | **ECTS credits: 5**

Syllabus outline

Biochemistry as a study of molecular structures and chemical reactions in the organism. Macromolecules: principles of organisation, conformation and molecular interactions. Amino acids and peptides: properties and functions. Proteins: structure and function, enzymes as biological catalysts. Action of biocides as enzyme inhibitors. Coenzymes, prosthetic groups and vitamins. Carbohydrates: structure and function, main categories in grapes. Lipids: structure and function. Neutral fats, oils and lipids in Mediterranean cultured plants and products. Waxes and complex lipids. Metabolism: basic concepts and regulation. Photosynthesis: reactions on the light and the dark reactions. Glycolysis. Alcoholic, lactic and glycero-pyruvic fermentation. Biochemical transformations that occur during vine production and in cases of vine defects. Citric acid cycle and oxidative phosphorylation. Nitrogen fixation and biosynthesis of amino acids. Nucleic acids and the genetic code. Protein synthesis and genetic engineering. Characteristics of GMO and problems associated with their production and utilisation.

Development of general and specific competence (knowledge and skills)

Students will develop the knowledge of molecular level structures and reactions find in the living organism. Biochemical base of some processes that take place during production of main Mediterranean growing plants will be emphasized.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

SOIL SCIENCE | **Course number: 10**

Hours weekly: 2+0+1+1/II **ECTS credits: 4**

Syllabus outline

Definition of soil, ground and pedosphere. Factors of Mediterranean soil genesis. Mother substrate and mother rock, climate, relief, time, organisms. Soil genetic processes. Soil morphology. Specific features of Mediterranean agricultural soils. Physical features of soil. Texture, structure, density, porosity, consistency, water in soil, air in soil, heat characteristics. Chemical features of soil. Mineral substance, organic substance, fertility elements – macro and micro nutrients, oxido-reduction processes in soil, sorption, soil solution, puffers and puffing soil ability. Microbiological features of soil. Soil classification. FAO classification. Soil classification in Croatia with particular consideration of soil types appropriate for agricultural production. Soil spread according to Pedological map Scale 1:300.000. Soil degradation. Erosion. Saltening of soil. Decrease in soil fertility. Soil survey for different forms of agricultural production in Mediterranean region.

Development of general and specific competence (knowledge and skills)

Basics of soil science including more important soil features. Insights into specific ways of using soil for Mediterranean agricultural production. Soil protection and ecological problems of Mediterranean agricultural production.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

PLANT PROTECTION I | **Course number: 11**

Hours weekly: 2+0+1+1/II **ECTS credits: 4**

Syllabus outline

Introduction and legal regulations. General terms related to plant pests. Plant protection (phytomedicine): term, measures, integrated plant protection, ecological production. Plant protection agents (phytopharmacy) – general part: production and consumption; registration of agents; division of agents; poisoned state of agents in case of man; residues of agents on agricultural products; selection of agents related to currency and purpose; poisoned state in case of animals, plants and environment; measures for protection of persons and environment; procedure in case of poisoning; pest resistance; form of agents; combined agents; mixture of agents; preparation of agents; application of plant protection agents; importance of warning signs and notes; currencies regulated for plant protection agents in Croatia**.** Plant protection agents (phytopharmacy) – special part: zoocides (insecticides, acaricides nematocides, limacides, rodenticides, corvicides); fungicides; herbicides; specific plant protection agents. Mechanical and physical aids in plant protection.

Development of general and specific competence (knowledge and skills)

During lectures and exercises, students acquire knowledge about importance of plant protection in plant production., protectionist measures, ,classification of plant protection agents, their application, their effective mechanism, economic aspects and environment protection.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

PHYSIOLOGY OF PLANTS | **Course number: 12**

Hours weekly: 2+0+1+0/II **ECTS credits: 5**

Syllabus outline

Basic functions of cell. Water regime of plants (content inside plants, absorption, transport and extraction). Mineral substances (importance, intake and transport across plant). Photosynthesis (importance, mechanism and chemism, types, factors affecting process of photosynthesis). Chemosynthesis. Circulation of assimilates inside plant. Biological oxidations, respiration and fermentation. Heterotrophic plants. Growth and development of plants. Development of agricultural plants. Commotion of plants. Resistance to extreme factors of outdoor environment.

Exercises:

Causing and observing different forms of plasmolysis. Determining sucking force on basis of size changes of crop tissue. Determining dry substance of cellular juice with help of refractometer. Proving and determining intensity of transpiration. Determining leaf surface. Determining number of stoma by print method. Separation of pigments of chloroplast from leaves. Separation of carotenides from carrot root. Forming starch at CO2 assimilation.

Development of general and specific competence (knowledge and skills)

To have insights into plant life processes and into how certain outdoor factors affect these processes, enabling better use of potentials related to fertility of cultivated verities, which contributes to better yield and better quality of plant products.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

MACHINES IN AGRICULTURE | **Course number: 13**

Hours weekly: 2+0+2+2/II **ECTS credits: 5**

Syllabus outline

Specific agricultural conditions in Eu-Mediterranean and sub-Mediterranean regions, groups of Mediterranean crops and growing technologies. Agro-family farms, estate size and selection of machines and devices to be used in agriculture. Internal-combustion engines: types, operation principle and main parts. Main parts of tractor. Models of tractors in agricultural production. Machines and devices used for terrain systematisation and planting. Machines and devices used for basic, integral and additional tillage. Machines and devices for organic fertilization, basic and additional mineral fertilization. Methods, machines and devices for pesticide application. Equipment and machines in planthousing. Methods and systems of irrigation. Methods, machines and equipment for protection from low temperatures and late spring frosts. Machines and equipment for mechanised picking. Machines and tools in vine growing and wine producing. Machines and equipment in olive production. Machines and devices used with other Mediterranean fruit varieties. Machines and equipment in production of other fruit varieties. Machines and devices in vegetable production. Machines and devices in production of some sorts of aromatic plants in Mediterranean region.

Development of general and specific competence (knowledge and skills)

Insights into operation principles of machines and devices used in agriculture and modern technologies, esp. in conditions with Eu-Mediterranean and sub-Mediterranean climates. Besides, students will learn how to use some modern machines and devices in agriculture.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

ENGLISH II | **Course number: 14**

Hours weekly: 1+0+1+0 /II **ECTS credits : 3**

Syllabus outline

Course contents to be selected from the following professional fields: soil science and plant nutrition, vine growing, plant protection, wine making, agroclimatology, fruit growing, agrotourism, etc.
The above stated contents to be expanded by some more general issues related to the future professional orientation of students.
Analysis of selected texts from professional literature.

Development of general and specific competence (knowledge and skills)

Improvement of reading and listening comprehension as well as speaking competence aimed at being prepared for written and oral communication in English, paying special attention to professional issues covered by this type of studying.

Types of classes and method of assessment

The course is carried out weekly, in the form of consultancy.

ITALIAN II | **Course number: 14**

Hours weekly: 1+0+1+0/II **ECTS credits: 3**

Syllabus outline

ESP – vocabulary and structures.
Exercises include: Tense System – Active Voice (imperfetto, condizionale semplice e composto, imperativo). Relative pronouns. Sequence of tenses. Compound words and word derivation.
Lectures selected from the following professional contents: soil science and plant nutrition, viniculture, olive growing, plant protection, wine making, agroclimatology, fruit growing, growing of vegetables, agrotourism.
Preparation of materials for seminar papers: selected professional terminology and issues covering Mediterranean agriculture.

Development of general and specific competence (knowledge and skills)

Independent reading and making comments on agricultural texts. Acquiring grammar knowledge as pre-requisite for correct written and oral ways of expressing.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

AGROCLIMATOLOGY | **Course number: 15**

Hours weekly: 2+0+1+0/II **ECTS credits: 4**

Syllabus outline

Climate. Light. Quality or composition of sunlight. Sunlight intensity. Daylight duration. Heat. Heating of land and water areas. Mean, average and extreme air temperatures. Daily and annual temperature change. Importance of heat as vegetation factor. Temperature sums for particular agricultural crops. Minimal, optimal and maximal temperatures. Air humidity. Water circulation in environment. Content of water steam in air. Importance of air humidity in agricultural production. Clouds and mists. Classification of clouds. Cloudiness. Rainfalls. Types of rainfalls. Monthly and annually recorded quantities of rainfall. Wind and atmospheric pressure. How wind occurs. Types of winds. Influence of wind on agricultural production. Meteorological instruments. Organisation of meteorological service in Croatia. Climate in Croatia.

Development of general and specific competence (knowledge and skills)

Basics of climatology. Climate and plant in agricultural production. Instruments for measuring climate phenomena and weather forecast. Macro and micro-climate features of agricultural area.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

AGRARIAN MICROBIOLOGY | **Course number: 16**

Hours weekly: 2+0+1+0 / II **ECTS credits: 4**

Syllabus outline

Introduction into role and importance of microorganisms. Structure of procariotic and eucariotic ones. Metabolism of microorganisms (catabolitic and anabolitic reactions, catabolism of carbohydrates, aerobic respiration, anaerobic respiration, fermentation). Growth and propagation of microoranisms (ways of their nourishing, bacterial growth curve).
Microorganisms important in wine making (yeasts, moulds and bacteria). Yeasts: Classification of yeasts. Bacteria with special reference to lactic sour and acetic bacteria. Moulds causing food of spoiled food. Microorganisms in circulation of elements in nature. Circulation of carbon, nitrogen and other elements. Role of microorganisms in soil fertility. Basics of HACCP. HACCP of plan in family farm.

Development of general and specific competence (knowledge and skills)

Students are expected to understand role and importance of microorganisms in matter circulation in nature as well as their role in producing and spoiling food.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

PLANT PROTECTION II | **Course number: 17**

Hours weekly: 2+0+2+0/III **ECTS credits: 4**

Syllabus outline

Introduction into Plant protection II. Plant pathology – term, definition, diseases and their agents. Fungi as agents of plant diseases. Procariots as agents of plant diseases (bacteria, molicuts). Viruses as agents of plant diseases. Abiotic agents of diseases. Infection, incubation, fructification. Epidemiology and prediction of plant diseases. Importance and task of applied entomology. Morphology, anatomy and physiology of insect. Systematics. Class: Insect, Arachnoidae, Myriapoda, Nemathelminthes, Gastropod, Mammalia, Aves. Methods of checking entomofauna. Polyfagous pests. Definition of weed, classification of weed, damages caused by weed. Systems of integrated plant protection. Integrated plant protection according to OILB suggestion. Economically important pests of: fruits, vine, vegetables and decorative plants and ways of their control.

Development of general and specific competence (knowledge and skills)

Though lectures, exercises and theoretical presentations, students learn about main (in terms of economy) pests of fruit, vine, vegetables and decorative plants, timing of their appearance and characteristic types of damages as well as measures for their prevention. .

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

MEDITERRANEAN FRUIT GROWING I | **Course number: 18**

Hours weekly : 3+0+1+1/ III **ECTS credits: 6**

Syllabus outline

Insights into fruit structure and functions of particular parts. Explanation of blooming, pollination and fructification as well as of propagation, cutting and growing forms. Emphasis on agroecological conditions on growing some fruit varieties. Following certain measures of fruit growing: intertillage, nutrition and types of fertlization, irrigation, protection from diseases and pests, picking and storaging, processing and offering products. The above-mentioned to be explained with help of following Mediterranean fruit varieties(fig, tangerine, kiwi, lemon, orange, pomegranate, hazel, Japanese apple and carob). State origin of each variety, its spread, production areas, foundations and yields. Practical activities covering propagation, irrigation, cutting and picking to be done in teaching and technological premises in Istria.

Development of general and specific competence (knowledge and skills)

Insights into most frequent fruit varieties in Mediterranean, their agro and pomotechnical measures in growing each variety, and cost-effectiveness of growing certain crops. Learning about cutting and fmodelling growing forms, and ways of picking and appropriate storaging of fruits.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

VINE GROWING I | **Course number: 19**

Hours weekly: 2+0+1+2 / III **ECTS credits: 4**

Syllabus outline

Introduction into vine growing. History of vine growing. Vegetative organs. Generative organs. Life cycle of vine. Vine cutting. Cutting through mature tree. Cutting technique. Natural conditions of vine growing. Vine binding. Binding techniques.
Vine nourishment and vineyard fertilisation. Systems used for maintaining soil: tillage, planting grass over soil, soil mulching in vineyards, use of herbicides, combined systems of soil maintaining, most frequent weeds in vineyards. Importance of vine foundations:
American kinds of Vitis species and their selection, American-American hybrids, American-European hybrids. Vine varieties: wine varieties, table varieties. Regions and sub-regions of the vine growing part of Croatia.

Development of general and specific competence (knowledge and skills)

Students learn about the basic morphological characteristics of vine; basic and advanced techniques of cutting through mature tree and vine binding; range of wine and table varieties and selection of foundations; zoning of vine growing areas in Croatia.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

OLIVE GROWING **Course number: 26**

Hours weekly: 2+0+1+2/III **ECTS credits: 6**

Syllabus outline

Origin, production areas and expansion of olives in Croatia and abroad. Basic structure (vegetative and generative organs), phenophases, impact of agro-ecological conditions on growth of olives and certain varieties. Propagation of olives (vegetative and generative), preparation of terrain, planting, establishment of growing forms, intertillage, diseases and pests, protection from them. Agro-technical and pomo-technical measures in production plantations of olives.
Varieties of olives and their characteristics.
Practical teaching activities (propagation, planting, cutting and harvest) to be done in appropriate teaching and technological premises in Istria.

Development of general and specific competence (knowledge and skills)

Insights into origin, expansion and importance of olives in man's life in Mediterranean region, also into most important agro- and pomo-technical measures of olive growing according to varieties. Insights into technique of propagation, cutting and establishment of growing forms. Also into ways of harvest and olive processing.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

MEDITERRANEAN LIVESTOCK FARMING

Course number: 24

Hours weekly: 2+0+1+0 / III **ECTS credits: 4**

Syllabus outline

Basics of livestock farming, species and breeds adjusted to the Mediterranean region. Autochthnous breeds, significance of autochthnous breeds (autochthnous Istrian cattle), autochthnous breeds of sheep and goats, their significance in relation to production characteristics and landscape protection. Cattle, sheep and goat feeding using natural pastures, cultivating pastures and improving pasture solvency, cattle, sheep and goat nutrition during a production cycle. Cattle, sheep and goat reproduction. Breeding the young. Sheep shearing. Milking sheep and goats, hand milking, mechanical milking and milking machines – milking tubes and sheds.
Milk procedures after milking, milk cooling. Determining milk quality. Milk processing. Turning milk into cheese.

Development of general and specific competence (knowledge and skills)

Familirizing with a way of livestock farming in the Mediterranean territory. Familirizing with criteria and technics of processing and placing faming products.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

ENGLISH III **Course number: 21**

Hours weekly: 1+0+1+0 / III **ECTS credits : 3**

Syllabus outline

Course contents to be selected from the following professional fields: soil science and plant nutrition, vine growing, plant protection, wine making, agroclimatology, fruit growing, agrotourism, etc.
The above stated contents to be expanded by some more general issues related to the future professional orientation of students.

Development of general and specific competence (knowledge and skills)

Development of strategic approach to reading with special respect to reading professional literature, development of ability to translate professional texts independently (English-Croatian and vice versa).

Types of classes and methods of assessment

Lectures and exercises / seminars. Student's knowledge assessed regularly through classes and, finally, his/her seminar paper is also assessed.

ITALIAN III **Course number: 21**

Hours weekly: 1+0+1+0/III **ECTS credits: 3**

Syllabus outline

ESP – vocabulary and structures.
Exercises include: Tense System – Active Voice (passato remoto, piuccheperfetto, congiuntivo, modi indefiniti). Sequence of tenses.
Lectures selected from the following professional contents: soil science and plant nutrition, viniculture, olive growing, plant protection, wine making, agroclimatology, fruit growing, growing of vegetables, agrotourism.
Preparation of materials for seminar papers: selected professional terminology and issues covering vine growing and wine making.

Development of general and specific competence (knowledge and skills)

Independent reading and making comments on agricultural texts. Acquiring grammar knowledge as pre-requisite for correct written and oral ways of expressing.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

MARKET IN AGRICULTURE | **Course number: 22**

Hours weekly: 2+0+1+0/III **ECTS credits: 4**

Syllabus outline

Theory of market and prices. Organisation, classification and functions of market. Importance and organisation of marketing in agriculture. World market of agricultural products. Requirements for applying marketing into Croatian agriculture. Market value of agricultural products. Specific features of supply considering agricultural products. Needs, consumption and demand in terms of agricultural products. Elasticity of demand. Prices of agricultural products. Market organisation. Specific features of policy covering prices of agricultural products. Parities of prices of agricultural products. Market institutions and distribution channels of agricultural products. Croatian foreign trade related to agricultural products. Designing marketing plan. Creating strategies of communication and promotion mix. Distribution channels.

Development of general and specific competence (knowledge and skills)

Designing marketing plan. Insights into marketing communication. Insights into distribution channels, in particular direct distribution.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

SEED PRODUCTION | **Course number: 23**

Hours weekly: 2+0+1+0 / III **ECTS credits: 4**

Syllabus outline

Seed, seed maturation, hereditary features of seed, what is a variety, biological foundations of seed production, what is seed production. Seed production tasks. Reproduction principles of plants in system of seed production, seed quality and control of seed quality, growing methods of seed crops, seed cleaning and treatment, seed production marketing, seed production legislature, agroecological conditions, organisation of seed production, seeds of vegetable, arable and feed crops.

Development of general and specific competence (knowledge and skills)

Insights into basic principles of seed production, basic technology of seed production covering most important vegetable, arable and feed crops.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

MEDITERRANEAN FRUIT GROWING II | **Course number: 25**

Hours weekly : 2+0+2+1/ IV **ECTS credits: 7**

Syllabus outline

Explanations of agroecological influences on growing some fruit varieties. Following certain measures of fruit growing: intertillage, nutrition and types of fertilization, irrigation, protection from diseases and pests, picking and storaging, processing and offering products. The above-mentioned to be explained with help of following Mediterranean fruit varieties (peaches, almonds, sweet and sour cherries, strawberries, plums, quinces, apricots, apples, pears, etc.). State origin of each variety, its spread, production areas, foundations and yields.
Practical activities covering propagation, irrigation, cutting and picking to be done in teaching and technological premises in Istria.

Development of general and specific competence (knowledge and skills)

Insights into most famous fruit varieties in Mediterranean, their agro and pomotechnical measures in growing each variety, and cost-effectiveness of growing certain crops. Learning about cutting and modelling growing forms, and ways of picking and appropriate storaging of fruits.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

GROWING OF VEGETABLES | **Course number: 20**

Hours weekly: 3+0+2+1/IV **ECTS credits: 5**

Syllabus outline

Importance and position of vegetable growing in agriculture. Improvement possibilities of vegetable production in Croatian agriculture. Requirements needed for setting up economy of vegetable growing. Vegetables and nourishment. Parting of vegetables. Propagation of vegetable crops. Factors of fructification. Deciding on technological ripening of vegetables. Influences of outdoor vegetative factors on growing of vegetable crops. Phytohormones and growth inhibitors in vegetable growing. Characteristics of soil for vegetable-growing and tillage practices. Soil as substrate in vegetable production. Use of soil analysis in determining doses of fertilizers. Dressing and fertilizers. Systems of plant production in vegetable growing. Basics of vegetable protection. Picking, packing and transportation of vegetables. Protected areas. Irrigation of vegetable crops. Technical procedures of seeding, planting and picking vegetable crops. Growing of vegetable varieties according to basics of botany, biochemistry, physiology, feeding, general production and plant protection.

Development of general and specific competence (knowledge and skills)

To have insights into prerequisites and possibilities of introducing production of vegetables onto family farms. To have insights into basic agro-ecological conditions of vegetable growing. To acquire basic elements of technologies related to growing of vegetable crops.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

VINE GROWING II | **Course number: 27**

Hours weekly: 2+0+1+2 / IV **ECTS credits: 5**

Syllabus outline

Agroecological conditions of vine growing. Arrangement of production area, improvement of physical, chemical and biological soil characteristics. Establishment of vineyards: preparation of surface for planting vineyard, other preliminary works prior to planting, planting of roots and shoots, taking care of young vineyards.
Supports in vineyards: wooden props and stakes, poles made of other materials, wire in vineyards, other materials used for supporting purposes, binding of trees, branchings, and sprouts. Green section. Technique of green cutting. Systems of growing vine-stocks: growing elements and terms, classification of growing systems, growing models and basic features, complex growing systems, renewal and changes of growing systems. Planthousing. Vine damages caused by natural disasters: frost, high temperatures, hail, etc.
Grape picking: picking wine varieties, picking and packaging of table grapes.

Development of general and specific competence (knowledge and skills)

Students learn about agroecological conditions of vine growing. Establishing vine plantations. Systems of vine growing, modelling and armature of vineyards. Insights into basic and advanced green cutting techniques, and damages in vineyards.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

WINE MAKING I | **Course unit number: 28**

Hours weekly: 2+0+1+2/ IV **ECTS credits: 5**

Syllabus outline

History of wine making. Chemical composition of grapes. Chemical composition of must: sugar, acids, phenols, tannins, enzymes, minerals. Grape ripening: accumulation of sugar, circulation of minerals, forming of organic acids, phenols and vitamins. Factors affecting grape quality. Vintage and deciding on vintage time. Preparation of cellar, equipment and vessels. Corrections and transformations in must before fermentation: sugar adding, decreased and increased acidification, enzymes. White wine vinification: characteristics, grape crushing, pressing (types of presses), protection from oxidation, fissure of pure must (spontaneous, centrifuging), activation of yeasts, violent and calm fermentation, decanting. Red wine vinification: grape crushing, maceration (classical and vinificators, warm-cold), factors affecting maceration. Rose wine vinification: definition, processing, decolouring. Vinification with carbonic maceration. Wine care: protection, adding.

Development of general and specific competence (knowledge and skills)

Insights into characteristics of basic must ingredients, allowed corrections and treatment of must before fermentation. Insights into modern technologies of producing white, red and rose wines.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

ENGLISH IV | **Course number: 29**

Hours weekly: 1+0+1+0 / IV **ECTS credits: 3**

Syllabus outline

Course contents to be selected from the following professional fields: soil science and plant nutrition, vine growing, plant protection, wine making, agroclimatology, fruit growing, agrotourism, etc.
The above stated contents to be expanded by some more general issues related to the future professional orientation of students.

Development of general and specific competence (knowledge and skills)

Development of project approach to professional issues, development of presentation skills in English, improvement of speaking competence in English.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

ITALIAN IV | **Course number: 29**

Hours weekly: 1+0+1+0/IV **ECTS credits: 3**

Syllabus outline

ESP – vocabulary and structures.
Exercises include: Tense System – Active and Passive Voice. Sequence of tenses. Conditional clauses. Direct and indirect speech.
Lectures selected from the following professional contents: soil science and plant nutrition, viniculture, olive growing, plant protection, wine making, agroclimatology, fruit growing, growing of vegetables, agrotourism.
Preparation of materials for seminar papers: selected professional terminology and issues covering vine growing and wine making.

Development of general and specific competence (knowledge and skills)

Independent reading and making comments on agricultural texts. Acquiring grammar knowledge as pre-requisite for correct written and oral ways of expressing.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

BASICS OF TOWN PLANNING AND FARM PREMISES | **Course number: 32**

Hours weekly: 2+0+1+0 / IV **ECTS credits: 4**

Syllabus outline

Specific features of rural economy in Mediterranean region. Farm buildings: farmer's house and cellars; Store houses and stores; Wine vaults. Structure of modern rural economy. Structure and organisation of barn for machines, equipment and production materials. Structure and organisation of oil-mill. Structure and organisation of wine cellar. Structure and organisation of premises in planthouse and facilities for producing planting material. Polythene greenhouses and hothouses and other facilities of protected space. Facilities for composting. Infrastructure of premises with special reference to disposal of utility, organic and dangerous wastes. Measures of work protection and fire-fighting measures in farm premises. Lab and other facilities used for production of wine and distillates. Spatial planning law. Building law. Topographical surveying law. Regulations on contents, scales of cartographic projections, compulsory spatial indicators and standard of survey of spatial plans. Measures for protecting farm environment.

Development of general and specific competence (knowledge and skills)

Insights into structure of different farm premises, especially in Mediterranean region, and into their organisation. Exercises aimed at recognising different farm premises.

Types of classes and method of assessment

The course is carried out weekly, in the form of consultancy.

BEEKEEPING | **Course number: 30**

Hours weekly: 2+0+1+0/IV **ECTS credits: 4**

Syllabus outline

Introduction into apiculture, benefits from bees. Systematisation and extension. Biological characteristics of honey bee, society members and bee's flat. Morphology and anatomy of bee. Sexual organs and fertilization, laying eggs, sex identification, brood. Labour division, mutual communication and outdoor orientation. Reproduction within bees' society, winter spending and spring development. Beehives, tools, types of apiaries, accommodation and manners of bee-keeping. Selection, production of queen bees and clusters. Production of gelee royale, wax and comb basis. Production of honey, analyses, falsification. Production of pollen, propolis and bees' poison. Pollination and honey-producing plants. Diseases and enemies of bees. Poisoning of bees, technological mistakes, and special issues.

Development of general and specific competence (knowledge and skills)

Insights into activities in apiary, required tools and protection from stings. Insights into types of beehives, organisation of beehives, how to approach beehives. Preparation of beehives. Insights into technology of producing products originated from bees.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

FISHERY | **Course number: 31**

Hours weekly: 2+0+1+0/ IV **ECTS credits: 4**

Syllabus outline

Introduction into problems in relation to fishing and fishery – food production resources.
Sea and seabed with respect to fishery.
Fishing - emergence - significance and overfishing.
Fisheries biology of demersal and pelagic population of sea organisms.
Basic principles of rational management of sea resources.
Fishery production in the Republic of Croatia and its improvement.
Methods of fishing technics.
Fundamental fishing tools and fishing technics.

Development of general and specific competence (knowledge and skills)

Familiarizing students with the role and significance of fish production in the Republic of Croatia and basic principles of managing sea resources.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

OLIVE PROCESSING | **Course number: 33**

Hours weekly: 2+0+2+1/V **ECTS credits: 6**

Syllabus outline

Structure and chemical composition of olive. Methods used for assessing oil quality. Influence of raw material quality on oil quality. Standard procedures of extracting oil from olives and influence of certain operations on oil quality. Guidelines for developing extraction procedures in order to improve oil quality. Disposal of oil mill wastes. Additional oil processing and oil storage. Legal regulations on conditions of launching virgin olive oil onto market. Refined olive oils and oils produced from olive rape. Indicators of authenticity of virgin olive oils. Advantages of olive oil in comparison with other fatnesses in alimentation. Standard procedures used for producing table olives and other products based on olives.

Development of general and specific competence (knowledge and skills)

Insights into standard procedures of oil extraction, processing and storage, production of table olives, and methods for deposing oil mill wastes. Better understanding of influence that raw material and some operations may have on oil quality. Insights into methods used for assessing quality and understanding of importance that indicators of oil quality may have.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

WINE MAKING II | **Course unit number: 34**

Hours weekly: 2+0+1+2 / V **ECTS credits: 5**

Syllabus outline

Alcoholic fermentation: classification of yeasts, selected yeasts, activators and inhibitors of fermentation. Malolactic fermentation of malic acid. Wine deposits: iron, copper, tartars, proteins. Wine clarification: types of clarifying agents and use. Wine filtering and centrifuging: types of filters and their operation effects. Processes of stabilisation: physical stabilisation, stabilisation of deposits of metals, colloids, tartars, chemical stabilisation, biological stabilisation. Bottling: bottling equipment, types of bottling and corking devices, labelling. Wine aging: oxido-reduction processes, ester forming, transformation of components of red wine colour. Wine aromas: primary-varietal: flowery, fruity, grassy; secondary-pre-fermentative, fermentative; tertiary. Wine failures and diseases. Wine made of raisins. Special wine: dessert, liqueur, aromatised wines. Sparkling wine: natural and pearl wine. Barrique wine: way of production, types of oak barrels. Wine tasting: colour, clarity, aroma-flavour, balance and quality. Legislative: Law of Wine, Wine Regulations.

Development of general and specific competence (knowledge and skills)

Through theory, students will acquire some new knowledge and expand their existent knowledge about main biochemical reactions of wine, appropriate doctoring, care, stabilisation and finalisation of wine. Insights into the most important chemical ingredients of wine, changes caused by different terms of maturation, and reasons of wine deterioration (failures and diseases).

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

PLANT GROWING IN PROTECTED AREAS | **Course number: 35**

Hours weekly: 2+0+2+1 / V **ECTS credits: 6**

Syllabus outline

Importance and function of protected areas. Elements required for preparation of building plan: selection of location, needed surface and arrangement of premises, workforce, investment sources. Building materials: bearing (types, features, advantages and disadvantages) and transparent (panels and foils - optical, thermal and mechanical features). Types of protected areas (description, function and application in cultural and climate conditions): individual protection, soil mulching, covering with perforated materials, protected beds, mini tunnels, high and low tunnels, polythene greenhouses, hotbeds, hothouses, etc. Light, equipment and requirement estimation. Heat, heating systems, calculation of losses and fuel need: sealing, energetic curtains, lower regimes of temperature, distribution systems, automatics, alternative sources of heat. Ventilation systems (methods of lowering temperatures), relative air humidity. Application of CC>2 Soil, mixtures of substrate and inert media. Specific features of fertilization and irrigation, calculation of requirements for hydropon technique, examples of nutritive solutions. Specific features of crop protection. Growing systems.

Development of general and specific competence (knowledge and skills)

Insights into basic types of protected areas. Possible ways of regulating micro-climate in protected areas. Insights into technologies of growing agricultural crops in protected areas.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

IRRIGATION | **Course number: 42**

Hours weekly: 2+0+1+1/V **ECTS credits: 4**

Syllabus outline

Introduction. Definition of irrigation. History of development and current position of irrigation in Croatia and in the world. Requirements for applying irrigation. Relation soil – plant – water in conditions of irrigation. Benefits and problems considering irrigation. Water dosage. Portion of irrigation. Starting point of irrigation. Source and quantity of water for irrigation. Quality of water used for irrigation. Basic elements of irrigation designing. Methods, types and systems of irrigation. Surface irrigation. Underground irrigation. Rain irrigation. Localised irrigation. Fertirrigation. Selection of method, type and system of irrigation. Regulation of water shortage in substrate in protected area. Water economy in protected area.

Development of general and specific competence (knowledge and skills)

Insights into basics of planning and using different irrigation systems in agricultural production. Feasibility study with calculations of water shortage and usage of fertilisers in systems of fertirrigation.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

PLANT HOUSING | **Course number: 37**

Hours weekly: 2+0+1+0/V **ECTS credits: 4**

Syllabus outline

Importance of planthousing in development of fruit growing and grape growing. Ways of propagation (vegetative and generative methods) and organisation of planthouse. Planning seedling production, preparing foundations and the rest for budding, ways of budding, stratification, vegetative propagation by using ripe and green shoots, propagation established by crop tissue, labelling, picking out and clamping of seedlings, production of planting material in containers, professional controls over production of planting material.

Development of general and specific competence (knowledge and skills)

Insights into technology of producing seedlings, standards of quality and treatment of planting material from producer to planting. Ability to apply technique of budding, preparation of shoots and foundations.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

SPECIAL AND SPARKLING WINES | **Course number: 38**

Hours weekly: 2+0+1+0/ V **ECTS credits: 4**

Syllabus outline

Brief historical overview of sparkling wine production. Production and characteristics of basic wine (selection of varieties, blending). Yeasts: features, activation and adding yeasts for 'second fermentation'. Technology of sparkling wine production: 'classical procedure': adding so-called liqueur (liqueur de tirage), bottling (types and characteristics of bottles), corking, keeping and arranging bottles, control over second fermentation, maturation with help of lees (maturation sûr lies), depositing on stands and machine depositing (remuage sûr pupitres), expedition of lees (degorgément), adding liqueur (liquer d'expédition), corking and labelling. Production of sparkling wine 'in tank': equipment for wine production, secondary fermentation, filtering, stabilisation and bottling. Technology of production of sparkling wine asti spumante. Technology of production of dessert and liqueur wines: Prošek, Marsala, Porto, etc., maturation and aging of liqueur wines. Technology of production of flavoured wines: Vermouth, Bermet, etc.

Development of general and specific competence (knowledge and skills)

Acquire necessary theoretical knowledge about production of special (dessert, liqueur and flavoured) and sparkling wines, and be able to do basic analysis of these wines during exercises.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

AGRICULTURAL BUSINESS ECONOMICS | **Course unit number: 39**

Hours weekly: 2+0+1+0/ V | **ECTS credits: 4**

Syllabus outline

Introduction into agricultural economics. Means of agricultural estate: term and classification of means production, capital assets, current assets, liquidity and solvency. Function of production, total, average and marginal product, law of diminishing returns, economy of scale. Theory of costs and calculation: term and kinds of costs, fixed charges, variable costs, marginal costs, cost dependence on changes related to capacity utilization, calculation of costs valid for different degrees of capacity utilization, expense cover point, calculations. Determination of performance results: expenditures, revenues, profit and loss account, financial flow of funds, operating result, establishing value of agricultural estate. Indicators of good performance: term of good performance, labour productivity, cost effectiveness, profitability. Economics of investment: preparation of investment projects, evaluation of investment projects.

Development of general and specific competence (knowledge and skills)

Providing students with information about basic economic sizes, crucial for good performance of agricultural estate. Helping students learn how to determine them. Presentation of possibilities and ways of influences that estate leader may have on its good performance.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

FLORICULTURE AND DENDROLOGY BASICS **Course Number: 40**

Hours weekly: 2+0+1+0/V **ECTS credits: 4**

Syllabus outline

Familiarizing students with the meaning of floriculture and dendrology within the frame of Mediterranean agriculture. Emphasizing esthetic and decorative values of certain species of annual and biennial flowers, perennials, bulbs, tubers, cut flowers and houseplants. Emphasizing esthetic and decorative values of particular species of trees and bushes, which have its application in the Mediterranean landscape architecture.

Development of general and specific competence (knowledge and skills)

Gaining knowledge on morphological features that are important in determining specific species of annual and biennial flowers, perennials, bulbs, tubers, flower cuts and house plants. Gaining knowledge on morphological features important in determining certain species of ornamental trees and shrubs, which belong to groups gymnospermae and angiospermae. Mastering the technology of gwoing certain types of flowers, ornamental trees and bushes. Developing creative skills in designing public and private green surfaces, parks and gardens, urban and rural area on the Mediterranean.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy

MANAGEMENT OF AGRICULTURAL HOLDINGS **Course number: 41**

Hours weekly: 2+0+1+0 / VI **ECTS credits: 3**

Syllabus outline

Management of agricultural holdings: what is entrepreneurship/management, what means to be a good manager, differences among entrepreneurs and managers, management roles (organizing, planning, leading…), efficient management, small and middle entrepreneurship, the quick test of agricultural holdings business efficiency, production factor of agricultural holdings, types of agricultural holdings, managing agricultural holdings (specifics; managing roles, overlapping of managing and ownership roles), developing business plans, state and local incentives for agricultural holdings, rural development programs and agricultural holdings, agricultural holdings record, specific organizational associations of agricultural holdings.

Developing of general and specific competence (knowledge and skills)

Enabling students for autonomous management of agricultural holdings. From theoretical knowledge on management and examples from holdings students will obtain sufficient entrepreneur and management skills and learn how to use them on agricultural holdings (family farms, small/middle holdings, craft etc.).

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

PRESERVATION OF AGRICULTURAL PRODUCTS

Course number: 36

Hours weekly: 2+0+1+0/VI **ECTS credits: 5**

Syllabus outline

General aspects and methods of conservation. Technological aspects of agricultural products as row material for processing and preservation. Handling with agricultural products during and after harvest. Technologies of the preservation of agricultural products; heat sterilization preservation, cool preservation, freeze preservation, preservation as concentration, dry preservation, biological preservation (fermentation), preservation with additives, preservation with ionized radiation, combined and other methods of preservation. Secondary row materials, additives and supporting means in preservation of agricultural products. Devices and equipments for preservation of agricultural products. Packaging and packing material for preserved agricultural products. Preservation of agricultural products in households.

Developing of general and specific competence (knowledge and skills)

Introductory insights into methods of preservation and technological aspects of single types in preservation of agricultural products and their practical mastering.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

AROMATIC AND MEDICINAL PLANTS

Course number: 43

Hours weekly: 2+0+1+0/VI **ECTS credits: 4**

Syllabus outline

Aromatic and medicinal plants through history.
Medicinal vegetable matters and their effects.
Collecting and drying of plants.
Preparation and ways of using.
Description of plants and their characteristics.

Development of general and specific competence (knowledge and skills)

Insights into the most important aromatic and medicinal plants and their possible use.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

LANDSCAPE ARCHITECTURE **Course number: 44**

Hours weekly: 2+0+1+0/VI **ECTS credits: 4**

Syllabus outline

Legislature related to landscape architecture. Historical development of gardens, methods of historical heritage of landscape architecture, plant as modelling element, architectural elements and urbanism, types of landscape, introduction into plant varieties and plant varieties according to their use, standards of landscape architecture and maintenance of green areas.

Development of general and specific competence (knowledge and skills)

Insights into historical development, methods, legislature and new technical and software programmes in this particular profession.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

RURAL FORMS OF TOURISM **Course unit number: 45**

Hours weekly: 2+0+1+0 / VI **ECTS credits: 4**

Syllabus outline

Historical development of tourism, tourism terms and their definitions, origin and development of rural tourism, forms of rural tourism, requirements for development of rural tourism, factors of rural tourism development, effects of rural tourism, marketing in rural tourism, advertising and selling in rural tourism, policy, organisations and services aimed at developing rural tourism, foreign and domestic experiences of rural tourism development, experiences considering rural tourism in Istria.

Development of general and specific competence (knowledge and skills)

Insights into tourism and its development, in particular that in rural areas, insights into pre-requisites and subjects of rural tourism development, ability to estimate motivational-attractive values of area and facilities required for development of rural forms of tourism, planning tourist supply in respect to rural tourism, development of selling skills.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

BUSINESS ANALYSIS | **Course unit number: 46**

Hours weekly: 2+0+1+0/ VI | **ECTS credits: 4**

Syllabus outline

Term, aim and task of analytical examination. Types and forms of analysis. Homogeneity of evidence. Preparations for analysis. Basic methods of analysis. Special methods of business analysis. Special methods of value analysis. Disturbance factors of comparative analysis. Usage of analysis results. Balance auditing. Balance analysis. Analysis of company financing and liquidity. Analysis of current assets. Analysis of financial outputs. Analysis of workforce structure. Organisation analysis and work standardisation. Analysis of salaries. Analysis of working activities done by management structures. Analysis of business policy. Complex analysis of production. Analysis of designing and planning production programme. Analysis of planning and realisation of production plan. Checking product solvency. Complex analysis of purchase. Complex analysis of selling. Analysis of productivity, cost-effectiveness and earning capacity.

Development of general and specific competence (knowledge and skills)

Helping student learn how to analyse agricultural estate considering all the elements that are important in business: current assets, financing and solvency, workforce, market, financial results. Ability to do these analyses as pre-requisite for making appropriate business decisions in time.

Types of classes and methods of assessment

The course is carried out weekly, in the form of consultancy.

Hours weekly: (X) Term VI	**ECTS credits: 15**

Syllabus outline

It is paper, independently written by student, and presents form of assessment of candidate's professional competence confirming that candidate is adequately capable of solving given professional task on his/her own. Its contents is based on application of knowledge acquired within curriculum of Mediterranean agricultural professional studies. Student chooses its topic in term V, and has right to apply for his/her task and paper after passing all exams and realising all exercises. Topic is confirmed by Board responsible for

Development of general and specific competence (knowledge and skills)

Acquiring professional knowledge, skills and experience through independent professional problem solving task and presenting bachelor paper.

Types of classes and methods of assessment

Student works on bachelor paper professionally supported by mentor.