

FRUIT TREES GROWING

(Specialization Horticulture 3th Year of study, 2st Semester)

Credits (ECTS): 5

Course category: Domain discipline (mandatory)

Course holder:

Professor PhD. ISTRATE MIHAI

Objectives of the discipline:

General objective

Knowledge of the biological, ecological and technological peculiarities of fruit trees and shrubs, to substantiate the cultivation technologies; technology for the production of fruit planting material.

Specific objective is:

Knowledge and proper use of fruit growing specific notions.

Knowledge and proper use of the recognition elements of fruit species.

Knowledge of the ecological requirements of the fruit species, explanation and interpretation of physiological and biochemical processes specific to the fruit species.

Applying the principles of shaping the crown of the trees and performing maintenance and pruning depending on the particularities of growing and fruiting.

Designing and evaluating the production activities of fruit planting material.

Use of methods, techniques and tools for grafting trees.

Use of methods and techniques of cutting the trees and use of methods and techniques of maintenance of the fruit plantations.

Contents (syllabus)

Course (chapters/subchapters)
Definition, importance and current situation of fruit growing
Definition and terminology
The importance of growing fruit trees and shrubs
Current situation and trends in fruit growing
Fruit growing species of temperate climate, taxonomy, nomenclature
Taxonomy
Growth mode of fruit species
Fruit classification
Fruit growing organology
Hipogean organs (root)
Epigeal organs (stem)
The life cycle of fruit growing species
Periods of age
Behavior of seedling and grafted material in their life cycle
The annual cycle of fruit growing species
Initial and final phenophases of vegetative and fruit organs.
Trees Resting state
Final phenophases of vegetative and fruit organs
Fruit bearing alternation
Causes and forms of manifestation
Its frequency and intensity

Measures to remove it
Ecology of fruit trees and shrubs
The peculiarities of the fruit-growing ecosystem
Light as a factor of vegetation
Heat as a factor of vegetation
Water as a factor of vegetation
Air as a factor of vegetation
Requirements of fruit trees and shrubs for the soil
Relief and distribution of ecological factors

Practical activity
Fruit growing organology
The technique of crown formation in trees
The technique of formation of pyramidal crowns
Formation of globular crowns without central axis
Formation of flattened crowns
The biological peculiarities of the fruit bearing branches in the pomacee species: apple, pear, quince, medlar.
The biological peculiarities of the fruit bearing branches at the drupes: cherry, cherry, plum, apricot, peach, almond.
The biological peculiarities of the fruit bearing branches in the nuts species: walnut, hazelnut, chestnut.
The biological peculiarities of the fruit bearing branches in shrubs.
Removing, classification and stratification of the seeding material.
Planting fruit trees and shrubs.

Bibliography

Cireaşă V., 1995 - *Pomicultură generală*, curs lito., UAI.

Drobotă Mari - Ann, 1995 - *Pomicultură - Îndrumător de lucrări practice*, lito, U.A.I.

Grădinariu G., Istrate M., Dascălu M., 1998- *Pomicultură*, Ed. Moldova, Iasi

Grădinariu, G., 2002 – *Pomicultură specială*. Editura „Ion Ionescu de la Brad”, Iaşi.

Istrate M., 2007 - *Pomicultură generală*. Editura „Ion Ionescu de la Brad”, Iaşi.

Parnia P. și colab., 1992 - *Producerea, păstrarea și valorificarea materialului săditor pomicol și dendrologic*, Ed. Ceres, București.

Popescu M. și colab., 1992 - *Pomicultură generală și specială*, Ed. Didactică și Pedagogică, București.

Gh. Cimpoieș 2000 – *Conducerea și tăierea pomilor*. . Intreprinderea Editorial Poligrafică Știința Chișinău.

xxx - Lucrări științifice ale I.C.P.P. Pitești - Mărăcineni

xxx - Lucrări științifice ale U.A.M.V. Iași, seria Horticultură

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Final exam	Written / oral examination	60 %
Evaluation of the activity during the semester	Written and oral assessments during the semester	40 %

Contact

Professor PhD. ISTRATE MIHAI

Faculty of Horticulture - IULS Iași

3 Mihail Sadoveanu Alley, Iasi, 700490, Romania

Tel: 0040232 407429

E-mail: mihai.istrate@iuls.ro

FRUIT TREES GROWING

(Specialization Horticulture 3th Year of study, 2st Semester)

Credits (ECTS): 4

Course category: Domain discipline (mandatory)

Course holder:

Professor PhD. ISTRATE MIHAI

Objectives of the discipline:

General objective

Knowledge of the biological, ecological and technological peculiarities of fruit trees and shrubs, to substantiate the cultivation technologies; technology for the production of fruit planting material.

Specific objective is:

Applying the principles of shaping the crown of the trees and performing maintenance and pruning depending on the particularities of growing and fruiting.

Designing and evaluating the production activities of fruit planting material.

Use of methods, techniques and tools for grafting trees.

Use of methods and techniques of cutting the trees and use of methods and techniques of maintenance of the fruit plantations.

Contents (syllabus)

Course (chapters/subchapters)
Romanian fruit growing reagrions
Production of fruit planting material
Nursery location, Nursery sectors, Nursery equipment
Rotation used for the nursery
Interior organization and preparation of the land
Tree rootstocks and their propagation technology
Grafting and its use in fruit growing, The technology of obtaining grafted trees
Methods of shortening the time of production of fruit planting material
Establishment of fruit plantations
Technological systems for tree cultivation
Selection, organization and preparation of the land
The choice and location of species and varieties
Planting trees and maintenance after planting
Technology of orchard maintenance
The main technical operations used to direct growth and fruit bearing
Crown Forms, Forming crowns techniques
Crown maintenance works
Mechanization of pruning
Maintenance and soil work in orchards
Orchards fertilization
Protection of trees from climatic accidents
Fruit load standardization technology
Fruit harvesting

Practical activity
Presentation of rootstocks of fruit species
Characterization of seeds and stones of generative rootstocks

Methods of grafting with detached bud
Methods of grafting with detached branch
Current work in the nursery
Technical interventions for directing the growth and bearing of the trees
Maintenance and pruning in apple, pear and quince orchards
Maintenance and pruning in plum and apricot orchards
Maintenance and pruning in sweet and sour cherry orchards
Maintenance and pruning in peach and almond orchards
Maintenance and pruning in walnut and hazelnut orchards

Bibliography

Cireaşă V., 1995 - *Pomicultură generală*, curs lito., UAI.

Drobotă Mari - Ann, 1995 - *Pomicultură - Îndrumător de lucrări practice*, lito, U.A.I.

Drobotă Mari - Ann, - *Soiuri de pomi, arbuști fructiferi și portaltoi*, curs lito, U.A.M.V. Iași.

Grădinariu G., Istrate M., Dascălu M., 1998- *Pomicultură*, Ed. Moldova, Iasi

Grădinariu, G., 2002 – *Pomicultură specială*. Editura „Ion Ionescu de la Brad”, Iași.

Istrate M., 2007 - *Pomicultură generală*. Editura „Ion Ionescu de la Brad”, Iași.

Parnia P. și colab., 1992 - *Producerea, păstrarea și valorificarea materialului săditor pomicol și dendrologic*, Ed. Ceres, București.

Popescu M. și colab., 1992 - *Pomicultură generală și specială*, Ed. Didactică și Pedagogică, București.

Gh. Cimpoieș 2000 – *Conducerea și tăierea pomilor*. . Intreprinderea Editorial Poligrafică Știința Chișinău.

xxx - *Lucrări științifice ale I.C.P.P. Pitești - Mărăcineni*

xxx - *Lucrări științifice ale U.A.M.V. Iași, seria Horticultură*

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Final exam	Written / oral examination	60 %
Evaluation of the activity during the semester	Written and oral assessments during the semester	40 %

Contact

Professor PhD. ISTRATE MIHAI

Faculty of Horticulture - IULS Iași

3 Mihail Sadoveanu Alley, Iasi, 700490, Romania

Tel: 0040232 407429

E-mail: mihai.istrate@iuls.ro