Course title	**Ornamental Trees, Shrubs and Bushes**				
Course code	**GALA2302**				
Course type	**Lectures and practical application**				
Level	Higher Diploma				
Year / Semester	2nd Year / 3rd Semester				
Teacher's name	Vasilis Litskas				
ECTS	6	**Lectures / week**	1	**Laboratories / week**	2
Course purpose and objectives	This course introduces students to the use of ornamental trees, shrubs, and bushes in landscape design, emphasising large-scale aesthetic applications. The focus is on the selection, placement, and maintenance of woody ornamental plants to enhance public and private spaces. Students will develop skills in aesthetic pruning, artistic shaping, and integrating trees and shrubs into landscape designs, ensuring functional and visual cohesion. The course will also cover climate adaptation and ecological considerations, ensuring sustainable urban and rural landscape planning.				
Learning outcomes	Upon completing the course, students will be able to: **Theoretical Learning Outcomes:** 1. **Recognise** different types of ornamental trees, shrubs, and bushes and their role in landscape design. 2. **Explain** the selection criteria for trees and shrubs based on growth patterns, climate adaptation, and landscape function. 3. **Understand** the ecological benefits of using ornamental plants in large-scale landscaping (e.g., urban parks, estates, and green spaces). 4. **Mention** sustainable maintenance techniques that protect ornamental trees and shrubs from environmental stressors such as drought, frost, and urban pollution. **Practical Learning Outcomes:** 5. **Apply** pruning and shaping techniques for aesthetic and health maintenance of ornamental trees and shrubs. 6. **Select** and **combine** trees and shrubs based on colour schemes, texture contrasts, and seasonal interest in landscapes. 7. **Identify** and **maintain** different climbing plants, hedges, and ground covers for decorative purposes.				
Prerequisites		**Required**			
Course content	**Week 1: Introduction to Ornamental Woody Plants** **Lectures** • Role of ornamental trees, shrubs, and bushes in landscaping • Differences between woody ornamental plants and herbaceous ornamentals				

- Basic classification (deciduous vs. evergreen, flowering vs. foliage trees)

Week 2: Selection and Design Principles

Lectures

- Key factors for selecting trees and shrubs (growth rate, canopy size, seasonal changes)
- Design principles: balance, symmetry, and texture contrast in landscapes
- Case studies: successful tree and shrub arrangements in public parks

Practical Field Work:

- Identify and document different tree and shrub arrangements based on design principles (balance, symmetry, texture contrast).

Week 3: Deep Root Training Tube (DRTT) Method – Establishment

Lectures

- Introduction to deep root training and its role in producing resilient ornamental trees/shrubs.
- Benefits for drought tolerance, stronger root systems, and urban planting.

Practical Field Work

- Creation of deep-rooted ornamental plants at a nursery using the DRTT method.
- Students set up and plant experimental specimens for long-term monitoring.

Week 4: Ornamental Trees in Large-Scale Landscaping

Lectures

- Popular ornamental tree species and their characteristics
- Integration of shade trees, flowering trees, and feature trees into designs
- Climate-adapted tree species for Mediterranean landscapes

Week 5: Ornamental Shrubs for Structure and Contrast

Lectures

- Functional use of shrubs in borders, hedges, and focal points
- Differences between formal vs. informal shrub arrangements

Week 6: Hedging and Ground Covers

Lectures

- Selection of low-maintenance shrubs for hedging
- Types of ground cover plants for erosion control and aesthetic appeal

- Planting and maintenance techniques for evergreen and deciduous hedges

Week 7: Aesthetic Pruning & Shaping of Trees and Shrubs

Lectures

- Principles of aesthetic pruning (shape enhancement, structure improvement)
- Shaping methods: topiary, cloud pruning, and bonsai techniques
- Artistic pruning examples in historical gardens

Practical Field Work:

- Practice basic aesthetic pruning techniques (formative pruning, topiary shaping) on shrubs or small trees in a school garden or nursery.

Week 8: Climbing Plants in Landscape Design

Lectures

- Selection and use of climbing plants for trellises, walls, and pergolas
- Differences between self-climbing vs. support-reliant species
- Colour coordination and seasonal interest with climbing plants

Practical Field Work:

- Install climbing plants (self-climbers and support-reliant) on basic structures like trellises or wire frames; plan their growth for aesthetic outcomes.

Week 9: Drought-Tolerant & Climate-Resilient Ornamentals

Lectures

- Selection of drought-resistant trees and shrubs for urban spaces
- Role of xeriscaping in reducing water consumption
- Protection methods against heatwaves, frost, and wind exposure

Practical Field Work:

- Plant Selection Exercise: Field survey at a nursery or green space to identify drought-tolerant species; develop a planting plan for xeriscaping a garden.

Week 10: Rock Gardens and Low-Maintenance Landscapes

Lectures

- Selection of trees and shrubs for rock gardens
- Combining ornamental plants with stones, sculptures, and water features
- Rock gardens around the world

Week 11: Ornamental Plants for Urban Green Spaces

Lectures

- Designing with trees and shrubs in high-density urban areas
- Using green walls, rooftop gardens, and vertical planting for aesthetics
- Challenges and maintenance of ornamental plants in city landscapes
- Technological innovations in ornamental landscaping; smart technologies and future trends

Practical Field Work:

- Design a small green wall or rooftop planting layout using appropriate ornamental species, focusing on maintenance and resilience in urban settings.

Week 12: Ecological Benefits & Evaluation of DRTT

Lectures

- Role of ornamentals in supporting biodiversity.
- Trees and shrubs as habitats for birds/insects.
- Wildlife-friendly designs.

Practical Field Work (Capstone)

- Measurement of soil moisture, stem and root growth in DRTT-planted specimens.
- Evaluation of efficiency of the DRTT method (comparison with control plants).
- Student-led discussion of findings and implications for sustainable landscaping.

Course Breakdown

Week	Teaching Content	Teaching Process
Week 1	Introduction to ornamental woody plants (role in landscaping, differences from herbaceous plants, basic classification)	Lecture
Week 2	Selection and design principles for trees and shrubs Practical: Identify and document tree and shrub arrangements	Lecture + Practical Field Work
Week 3	Deep Root Training Tube (DRTT) Method – Establishment Creation of deep-rooted ornamental plants at a nursery using the DRTT method.	Lecture + Practical Field Work
Week 4	Ornamental trees in large-scale landscaping; species characteristics and climate adaptation	Lecture

	Week 5	Functional use of shrubs in borders, hedges, and focal points	Lecture
	Week 6	Hedging and ground covers; planting and maintenance techniques	Lecture
	Week 7	Aesthetic pruning and shaping of trees and shrubs; artistic pruning examples Practice basic aesthetic pruning techniques	Lecture + Practical Field Work
	Week 8	Climbing plants in landscape design; types and uses Practice: Install climbing plants on structures	Lecture + Practical Field Work
	Week 9	Drought-tolerant and climate-resilient ornamentals; xeriscaping Practical: Field survey and xeriscape planting plan	Lecture + Practical Field Work
	Week 10	Rock gardens and low-maintenance landscapes	Lecture
	Week 11	Ornamental plants for urban green spaces; challenges in urban landscaping Practical: Design a green wall or rooftop garden	Lecture + Practical Field Work
	Week 12	Ecological Benefits & Evaluation of DRTT	Lecture + Practical Field

Teaching methodology	**Theoretical Instruction:** The lectures will be delivered through an interactive, student-centered approach, encouraging active participation. Each session will begin with a brief introduction to the theoretical concepts, followed by in-depth discussions of key principles. Visual aids, including slides and videos will be used to enhance understanding and stimulate critical thinking. Students will be encouraged to engage with the material through group discussions and problem-solving activities. **Practical Instruction:** The practical sessions are designed to reinforce theoretical knowledge through hands-on learning, observation, and experimentation. Students engage in field work activities that include identifying and documenting different tree and shrub arrangements, designing a small shrub border, aesthetic pruning techniques, installing climbing plants and more.These sessions aim to build practical skills by directly connecting practice with theoretical content covered in lectures.
Bibliography	**Greek Bibliography** • Αναστάσιος Δάρρας (2010), Κήποι, βεράντες, οροφόκηποι: Ανθοκομία - Κηποτεχνία καλλωπιστικών Φυτών στο αστικό περιβάλλον, Έμβρυο, ISBN 978-960-8002-57-9. • Πάτλης, Ιωάννης (2003), Οδηγός καλλωπιστικών φυτών: Επιλέξτε φυτά για το χώρο σας, Αθήνα, Σταμούλη Α.Ε., ISBN 960-351-435-7 Crosbie, Colin, μετάφραση Μαρία Παΐζη (2011), Πρακτικό κλάδεμα για όλα τα φυτά: Θάμνοι,

<table>
<tr><td></td><td>
περιφράξεις, οπωροφόρα, αναρριχώμενα, καλλωπιστικά, 1η έκδ., Αθήνα, Ίριδα, ISBN 978-960-7926-75-3

Huntington, Lucy, μετάφραση Ιωάννης Βλαχάκης (2008), Καλλωπιστικά φυτά ταξινομημένα κατά χρώμα, 1η έκδ., Αθήνα, Κλειδάριθμος, ISBN 978-960-461-120-1
Καρράς, Γιώργος (2008). Ετήσια, πολυετή και βολβώδη : Η παραγωγή, η φροντίδα και η χρήση τους στην κηποτεχνία. ISBN: 9607667255

English Bibliography

Sabina George Thekkayam (2021). Ornamental Plants. New Delhi : NIPA. 2021. ISBN: 9788190851268. EBSCOHost.
Roy, Darbeshwar (2019). Breeding of Ornamental Crops. Oxford, U.K. : Alpha Science Internation Limited. 2019. EBSCOHost.
Graeme Hopkins, Christine Goodwin (2011). Living Architecture : Green Roofs and Walls. Collingwood, Vic : CSIRO PUBLISHING. EBSCOHost.

</td></tr>
<tr><td rowspan="2">Assessment</td><td>

Attendance and participation 10%
Individual Written Assignment 20%
Final Practical examination 40%
Final written examination 30%

</td></tr>
<tr><td>
Final written examination includes closed-ended questions (e.g., multiple-choice, matching, true/false) and open-ended questions (e.g., short-answer, essay-type, case studies). The duration of the final written examination is two academic periods and accounts for the 30% of the final grade. Theoretical learning outcomes are also assessed through the individual written assignment on themes related to the theoretical knowledge transmitted during lectures. The individual written assignment accounts for the 20% of the overall grade.

Performance to laboratory work (field work) is assessed through a final practical examination which accounts for the 40% of the overall grade and covers the assessment of technical skills such as pruning, installations etc. The duration of the practical examination is two academic periods.

Student performance is evaluated on a scale of 0 to 100, with a minimum overall passing grade of 60. The final grade is calculated as a weighted average of the assessment components disclosed above.
</td></tr>
<tr><td>Language</td><td>Greek or English</td></tr>
</table>