Course title	Sports and Recreation Facilities Management				
Course code	GALA3502				
Course type	Lectures and practical application				
Level	Higher Diploma				
Year / Semester	Year 2 Semester 5				
Teacher's name	Antonia Stelikou				
ECTS	**6**	**Lectures / week**	**2**	**Laboratories / week**	**1**
Course purpose and objectives	This course aims to provide students with a comprehensive understanding of turfgrass, ground covers, and sports turf systems, with emphasis on their role in sustainable landscape and sports facility management. It equips students with both theoretical knowledge and practical skills in species selection, installation, cultural practices, and advanced turf care techniques such as thatch control, topdressing, aeration, rolling, mowing strategies, and the use of biostimulants, growth regulators, and colorants. Students will develop the ability to evaluate, maintain, and design turf and ground cover systems for ornamental, recreational, and professional sports contexts with a focus on sustainability, functionality, and aesthetics.				
Learning outcomes	Upon completion of the course, the students are expected to: Theoretical Learning Outcomes • Explain the classification, characteristics, and ecological functions of turfgrass, ground covers, and mosaic plants in ornamental and sports landscapes. • Describe principles of turfgrass and ground cover selection, establishment, and long-term maintenance, including sustainability considerations. • Discuss advanced turf care practices such as thatch reduction, topdressing, rolling, vertical cutting, mowing strategies, and the use of biostimulants, plant growth regulators, and colorants. • Compare natural, mosaic, and synthetic turf systems in terms of performance, cost, and environmental impact. Practical Learning Outcomes:				

	• Prepare soils, establish turf and ground cover systems, and apply suitable irrigation methods. • Demonstrate safe and effective use of turf maintenance techniques, including mowing, aeration, rolling, and topdressing. • Diagnose common turf pests, diseases, and thatch problems, and recommend appropriate integrated management strategies. • Develop and present a seasonal maintenance plan for ornamental lawns, mosaic planting beds, or sports turf facilities.		
Prerequisites		**Required**	
Course content	**Week 1: Introduction to Turf & Ground Covers** • **Lecture:** Definitions and classifications of grasses, turfs, and mosaic plants; ornamental vs. sports roles; sustainability functions (erosion control, microclimate, biodiversity). • **Practical 1:** *Soil Preparation for Turf & Ground Covers* – assess soil texture, pH, compaction; demonstrate aeration and amendments. **Week 2: Turfgrass Selection (Landscaping & Sports)** • **Lecture:** Cool-season vs. warm-season grasses; drought and wear tolerance; climate adaptation; selecting grass for lawns vs. sports fields. • **Practical 2:** *Seed Germination Trials* – sow multiple grass species; compare emergence and vigor. **Week 3: Turfgrass & Ground Cover Installation** • **Lecture:** Seeding, sod, hydroseeding; establishment methods; installation challenges in sports vs. ornamental contexts; drainage and irrigation. • **Practical 3:** ***Field Installation*:** lay sod, direct sow seed, and plant mosaic ground covers; basic irrigation setup. **Week 4: Establishment & Early Maintenance** • **Lecture:** Root establishment and monitoring; irrigation scheduling; early mowing and rolling to improve surface firmness; introduction to mowing patterns in sports turf.		

- **Practical 4: *Establishment Monitoring*** – check root anchorage, apply first mowing, and demonstrate rolling for surface evenness.

Week 5: Turf Nutrition & Fertilization

- **Lecture:** Macro/micronutrients; fertilizer plans for lawns and sports facilities; use of biostimulants (seaweed extracts, amino acids) and plant growth regulators (PGRs) for growth control.
- **Practical 5: *Fertilization & Biostimulant Application*** – prepare fertilization schedules; demonstrate safe application of fertilizers, PGRs, and liquid biostimulants.

Week 6: Pest, Disease & Thatch Management

- **Lecture:** Major turfgrass pests and diseases; invasive weeds; IPM strategies; thatch accumulation causes, impacts, and reduction methods (vertical cutting, scarification, topdressing).
- **Practical 6: *Turf Health Workshop* –** field inspection for pests/diseases; measure thatch layer; demonstrate vertical cutting and light topdressing.

Week 7: Mosaic Plants & Low-Water Ground Covers

- **Lecture:** Ornamental ground covers (ivy, vinca, sedum, thyme); ecological roles; designing mixed mosaics with turf; sustainability benefits.
- **Practical 7: *Mosaic Bed Planting* –** plant a mix of low-water ground covers with mulch and spacing strategies; assess seasonal care needs.

Week 8 : Advanced Turf Cultural Practices

- **Lecture:** Aeration techniques (core, deep tine); topdressing for leveling and thatch reduction; vertical cutting for density improvement; rolling for firmness vs. compaction risk.
- **Practical 8: *Cultural Practices Demonstration* -** hands-on use of aeration tools, rolling equipment, and application of sand topdressing.

Week 9 : Irrigation, Water Management & Mowing

- **Lecture:** Irrigation methods (drip, sprinklers, subsurface); water scheduling for efficiency; advanced mowing strategies for sports (striping,

	checkerboard); use of turf colorants for aesthetics and overseeding transitions. • **Practical 9: *Irrigation & Mowing Patterns*** – install small drip irrigation; practice mowing with pattern creation; apply turf colorant on demo patch. **Week 10 : Sports Turf Field Applications** • **Lecture:** High-wear management in football, golf, and multipurpose fields; evaluating playability; case studies of integrated practices. • **Practical 10: *Sports Turf Facility Visit* –** assess mowing, irrigation, aeration schedules; evaluate wear tolerance and surface quality. **Week 11 : Seasonal & Sustainable Maintenance** • **Lecture:** Seasonal schedules (drought, frost, heat stress); integrating mosaics and turf; sustainability measures (low-input turf, recycled amendments, organic practices). • **Practical 11: *Maintenance & Sustainability Plan* –** students draft seasonal maintenance plans including thatch, topdressing, mowing, irrigation, and sustainability measures. **Week 12 : Synthetic Turf & Future Innovations** • **Lecture:** Synthetic turf: uses, pros/cons vs. natural; non-plant alternatives (permeable pavements, recycled covers); future trends (smart irrigation, IoT sensors, bioengineered grasses). • **Practical 12: *Synthetic vs. Natural Turf Comparison*** – install sample synthetic turf, compare with natural turf; evaluate durability, maintenance needs, aesthetics, and environmental impact.
Teaching methodology	The course will be delivered through a balanced combination of lectures, practical sessions, and fieldwork to ensure students gain both theoretical knowledge and applied skills. Lectures introduce the scientific principles of turfgrass biology, ground covers, and advanced management practices, supported by case studies from ornamental and sports contexts. Practical sessions provide hands-on experience in soil preparation, turf installation, irrigation, mowing, aeration, topdressing, and pest/disease diagnostics, allowing students to practice professional techniques using industry-standard tools. Field visits to sports

	facilities, landscaped areas, or nurseries expose students to real-world applications and sustainability challenges in turf and ground cover management. Active learning approaches, including group design projects, problem-solving exercises, and maintenance planning workshops, encourage teamwork and critical thinking. The methodology emphasizes continuous integration of theory with practice, preparing students to evaluate, implement, and communicate sustainable turf and ground cover management strategies effectively.
Bibliography	**Greek Bibliography** • Κορδάτος, Χαράλαμπος (2016), Διαχείριση γηπέδων γκόλφ, αθλητικών εγκαταστάσεων και πάρκων: Εγχειρίδιο Κηπουρικής, KES College. • Σπαντιδάκης, Ιωάννης Γ. (2011), Χλοοτάπητες: Επιστήμη, τεχνική, διαχείριση, 2η έκδ., Αθήνα, Σταμούλη Α.Ε., ISBN 978-960-351-867-9 • Stell, Elizabeth P. - μετάφραση Δ. Π. Κωστελένος (2000), Τα μυστικά του γόνιμου εδάφους: Ο οδηγός οργανικής καλλιέργειας, λίπανσης και δημιουργίας υγιούς και γόνιμου εδάφους για τον κήπο και το γκαζόν σας, Αθήνα, Ψύχαλος, ISBN 960-7920-49-X **English Bibliography** • Barrett, James, Vinchesi, Brian (et.al.) (2003). Golf course irrigation: Environmental design and management practices. John Wiley & Sons. ISBN: 9780471148302 • Geoff Connellan (2013). Water Use Efficiency for Irrigated Turf and Landscape. Original print ed. Collingwood, Vic : CSIRO PUBLISHING. ISBN: 9780643094291. EBSCO Host. • Gary Beehag, Jyri Kaapro, Andrew Manners (2016). Pest Management of Turfgrass for Sport and Recreation. Clayton, Vic : CSIRO PUBLISHING. ISBN:9780643095144. EBSCOHost.
Assessment	• Attendance and course participation: 10% • Practical examination 40% • Final written examination: 50%
	Student performance in this course will be evaluated through a combination of participation, practical examination, and written examination.

	• **Attendance and Active Participation (10%)**: Attendance and engagement in lectures, practical sessions, and fieldwork are essential. Active involvement in discussions and activities will contribute to this component. • **Practical Examination (40%)**: The practical examination assesses students' ability to apply the concepts and techniques covered in the course. Students will be evaluated on technical execution, accuracy, safety, and problem-solving in real or simulated settings. • **Final Written Examination (50%)**: The final written exam constitutes the main summative assessment of the theoretical component. It will include a mix of closed-ended questions (multiple-choice, matching, true/false) and open-ended questions (short-answer, essay-type, case studies). The examination lasts for two academic periods. The final grade will be calculated as a weighted average of these components. Student performance is graded on a scale of **0 to 100**, with a **minimum passing grade of 60**.
Language	Greek or English