Course title	**Dendrological Gardens (ECTS 6)**
Course/module code	**DB2406**
Semesters of instruction	Semester 4/8
Assigned instructor	Khalikov Sanjar Ravshanovich, assistant
Language of instruction	Uzbek
Course type	Compulsory
Academic hours (including independent study)	**Total hours – 180.** **Classroom hours – 72.** Lectures, hours – 0 Laboratory classes, hours – 0 Practical classes, hours – 72 **Independent study – 108 hours**
ECTS	6
Aim and objectives of the course / learning outcomes	**Aim of the course** – to develop in students knowledge, skills and abilities concerning the history, objectives, types and fundamentals of designing dendrological gardens (arboreta and botanical gardens), and the principles of collecting, introducing and displaying trees and shrubs. Mastering the content of the course serves to develop students' scientific and creative thinking, as well as the skills of independently developing a dendrological garden project. The aim of teaching the course is to develop in students knowledge, skills and abilities concerning the structure of dendrological gardens, the methods of forming plant collections and their types; mastery of professional and personal skills in selecting and placing plants and creating a composition in a dendrological garden project; Teaching students dendrological, architectural and graphic visual materials, mastery of the ability to depict a design idea artistically and to use it. **Objective of the course** – to study the theoretical and practical aspects of dendrological gardens and to develop in students the skills needed to create a garden composition that takes into account the systematics, ecology and ornamental properties of plants. Particular attention is paid to the acclimatization of plants, the preservation of scientific collections, and the combination of educational and recreational tasks. **Learning outcomes:** 1. To have an understanding of the origin, types and functional purpose of dendrological gardens; 2. To divide dendrological gardens into types according to their scientific, educational and recreational orientation, and to determine the functional zones of a garden; 3. To know the methods of placing trees and shrubs in collections on the basis of systematic, ecological and geographical principles; 4. To know the basic concepts and principles of designing a dendrological garden and to have the skills to apply them; 5. To have the skills to apply methods of analysing the processes of dendrological garden design and of making decisions on its problems.

Course content (topics)	**I. Main theoretical part (lectures)** Lectures are not provided for in the standard curriculum of the course. **II. Guidelines and recommendations for organizing laboratory classes.** Laboratory classes are not provided for in the standard curriculum of the course. **III. Guidelines and recommendations for practical classes** The instructor's preparation for a practical class begins with the study of the source documents (curriculum, thematic plan, etc.) and ends with the drawing up of a lesson plan. The instructor must have an understanding of the aim and objectives of the practical class and of the volume of work that each student must complete. The methodological guidelines are the instructor's main methodological document when preparing and conducting practical classes. The aim of the practical class is the understanding of theory and the acquisition of skills. It consists in developing the ability to apply them consciously in educational and professional activity and to formulate one's own point of view convincingly. **Recommended topics for practical classes:** 1. Introduction. Aims and objectives of dendrological gardens; familiarization with the project programme. Issuing of the assignment on the topic "Design of a Dendrological Garden (Arboretum) on the Outskirts of a City". Scientific and analytical discussion, familiarization with the literature and methodological works. 2. History of dendrological gardens: botanical gardens and arboreta of the world and of Uzbekistan. 3. Types of dendrological gardens (scientific, educational, recreational) and their functional zones. 4. Site selection for the garden and analysis of natural conditions (relief, soil, climate, water). 5. Systematics of trees and shrubs and principles of compiling dendroflora collections. 6. Principles of plant placement: systematic, ecological and geographical (floristic) methods. 7. Plant introduction and acclimatization; criteria for selecting introduced species. 8. Ornamental properties of trees and shrubs: crown shape, colour of leaves and flowers, seasonal change. 9. The main ecological factors and their influence on the plants of a dendrological garden. 10. Execution of the first clausura (timed sketch exercise) on the topic in A3 format. 11. Analysis of the first clausura; methodological analysis of the elements and norms of the project. Work on the preliminary sketch idea for the topic. 12. Variant development of the sketch. Taking the functional zones of the garden into account in the sketch idea. Preparation for the final clausura. 13. Analysis of the sketch. Methodological realization of the sketch idea. Formation of the concept of the idea. Execution of the final clausura in A3 format. 14. Design of the garden's network of roads and footpaths, the entrance zone and the exhibition areas. 15. Completion of the development of the design idea; execution of the master plan with layout composition to scale. 16. Planning of the collection areas, the greenhouse (conservatory) and the nursery. 17. Drawing of the project drawings with their arrangement on the drawing board.

18. Dimensioning within the project and preparation of explications (plant assortment). Elaboration of the surroundings (entourage) in elevation and perspective views.
19. Comparison of the project by artistic-figurative and economic criteria and by effectiveness. Consideration of the adopted variant from an analytical-synthetic point of view.
20. Development of graphic details.
21. Execution and completion of graphic modelling; submission of the project. Discussion of the project.

IV. Independent study and independent work.

The independent-learning competence helps students in their independent self-development and in increasing the effectiveness of their professional activity. Students carry out independent work on their mobile devices under the guidance of the instructor, in traditional or electronic form.

Topics recommended for independent study:

1. The concept of dendrological gardens and their significance.
2. Well-known dendrological gardens and arboreta of the world.
3. History of botanical gardens and arboreta of Uzbekistan.
4. Stages of designing a dendrological garden.
5. Assessment of the relief and soil conditions of the garden territory.
6. Functional zones of dendrological gardens and their tasks.
7. Structure and types of scientific collection areas.
8. Methods of organizing open exhibition areas.
9. Types of garden roads and paths and the norms for their design.
10. Methods of introduction and acclimatization, and their stages.
11. Placement of plants in dendrological gardens according to systematic and ecological principles.
12. Principles of forming a collection of coniferous trees.
13. Principles of forming a collection of deciduous trees and shrubs.
14. Irrigation systems and the role of water bodies in the garden composition.
15. Types and purposes of greenhouses and glasshouses.
16. Organization of nursery management.
17. Methods of plant propagation (by seeds, cuttings, grafting).
18. Methods of storage, care and maintenance of plants (pruning, shaping).
19. Transportation and transplanting of plants.
20. Inventory, certification (passporting) and labelling of trees.
21. Design of educational (ecological) trails and information signs in a dendrological garden.
22. Fences, gates and the entrance group of the garden.
23. Small architectural forms and garden equipment.
24. Lighting and engineering networks.
25. Functions of hedges, bosquets and arboreta in the garden composition.
26. Protection of plants from diseases and pests.
27. Protection of rare and endangered tree species.
28. Recreational and ecological educational opportunities of dendrological gardens.

	29. By what features do representatives of the pine and cypress families differ from one another? 30. By what biological and ecological features do representatives of the elm family differ from one another?
Student assessment	The assessment of students' knowledge is based on indicators of the mastery of the learning material during the semester and on the final assessment (results of tests, assignments, and written and oral work). In the course "Dendrological Gardens", students are assessed on a 100-point system. Of these, 50 points are allocated to the result of ongoing and interim assessment (of the 50 points, 60% is ongoing assessment and independent study, and 40% is interim assessment), and 50 points to the result of the final assessment. Students who score less than 30 points in total for ongoing and interim assessment are not admitted to the final examination. A student who scores 30 or more points in the final assessment is considered to have mastered the course.
Examination requirements	The student must fully master the theoretical and practical concepts on the topic and be able to reflect the results of analysis correctly. The student must complete the tasks given in the ongoing and interim forms of assessment, as well as the independent work. In addition, within the established deadlines the student must score the required number of points in ongoing assessment, interim assessment, independent study and final assessment in the relevant course. A student who has not completed the tasks of ongoing assessment, interim assessment and independent study, and who has scored less than 30 points for these tasks and types of assessment, is not admitted to the final assessment. In addition, a student who, without a valid reason, misses 25 or more percent of the classroom hours allocated to the course is removed from the course, is not admitted to the final examination, and is considered not to have earned the corresponding credits for the course. A student who fails the final examination or scores in the range "0–29.9" in these types of examination is considered to have an academic debt.
Recommended literature	**Main literature:** 1. "Dendrology": textbook. A.K. Kayumov, E.T. Berdiev, Kh.F. Khamraev, S.A. Turdiev. "Fan va texnologiya", Tashkent, 2015. 2. "Dendrology". A. Kayumov. Study guide, Tashkent, 2017. **Additional literature** 4. Structure and Design of Landscape Architecture. A. Uralov, I. Makhmatkulov, study guide. Samarkand, 2019, 136 pp. 5. "Urban Planning and Landscape Architecture". D.U. Isamukhamedov, M.K. Akhmedov, K.D. Sattarova, study guide. Tashkent, 2019, pp. 178–200. 6. Fundamentals of Architectural Design. A. Uralov, Kh. Pulatov, M. Miryusupova, M. Zoirova, O. Salimov, Sh. Nurmukhammedova, D. Alimova, A. Turdiev, Sh. Reyimbaev. Textbook. Tashkent, 2010, 201 pp. **Internet resources** 6. www.landshft.ru 7. www.gardenr.ru 8. www.land-desingn.ru 9. www.membrana.ru 10. http://www.arhitekto.ru

	11. https://classes.cornell.edu/browse/roster/FA26/class/LA/4910?utm_source=chatgpt.com