

Ministry of Higher Education and Scientific research



Salahaddin University

College of Agricultural Engineering Sciences

Forestry Department

Subject: *Forest Nursery / practical*

Course Book For : 3rd year students

Lecturer's name: Zhala Baqi Taha

Academic Year: Fall Semester 2023 – 2024

Practical part

Tuesday: 11.30 am - 2.30 pm Lab (5)

Course Book of (3rd stage forestry)

1. Course name	Forest Nursery practical
2. Lecturer in charge	Zhala Baqi Taha
3. Department/ College	Forestry / Agricultural Engineering Science
4. Contact	e-mail: e-mail: zhala.taha@su.edu.krd Tel: 07504857072
5. Time (in hours) per week	Practical: 2 hours per week.
6. Office hours	8
7. Course code	
8. Teacher's academic profile	Practical I finished my B.Sc. in Erbil Salahaddin University – Agriculture college- 2006-2007; I started working as a lab assistant at my university directly because I was the first one of the top students in the plant production department, then I applied for post-graduation M.Sc. through (HCDP) program, finished it in Turkey kahramanmaras university – Bioengineering and science department. Nowadays I am working as assistant lecturer in agriculture college – Forestry department.
9. Keywords	Nursery, Seed beds, Transplanting, Seed sowing, Biotic factor, Nursery Disease, Fertilization.
10. Course overview:	
<p>The nursery is one of the important fields in plant production. It produces billions of plants every year, making major contributions to the forestry, vegetable, fruit, landscape, cut flower and parks industries. There will always be a demand for plants and, in turn, there will always be a need for nurseries.</p> <p>Throughout the world, nurseries come in all types and sizes. Many are small family businesses, sometimes just a small hobby business to supplement the family's normal source of income. At the other end of the scale are large commercial enterprises that employ dozens of people and grow millions of plants. No matter what size, a nursery always needs good management if it is to be financially viable.</p>	

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11. Course objective:

Objectives of the course:

- 1- Make student be familiar with the principles of nursery in the field.
- 2- Also to practice on different methods of plant propagation with using tools and equipment related to this subject.
- 3- Introduce students to the importance of the nursery and seed beds.
- 4- Students must identify the seed sowing in the nursery.
- 5- Students must know how to transplanting the seedlings in the nursery.

12. Student's obligation

Students are required to conduct two exams in Fall semester in Forest Nursery practical part.

13. Forms of teaching

Direct method following for teaching with student. All lectures will be explained by using PPT. Software with connecting to projector. White board will be used for more explanation. A copy of hand out will give to the students to write their notes.

14. Assessment scheme

All students should be presented in the lab. Quiz will be conducted every lectures with giving 5 minutes to the students. The mean of two exams will be out of (25) marks and (10) marks for Actives' for practical part with general total (35 marks).

1-	Quiz and student activities	10 Marks
2-	Test exam	25 Marks
3-	Total	35 Marks
4-	Final Examination	0

Total **35 Marks**

15. Course Reading List and References:

1- Edmonds,R.L. James K. Agewe & Robert I. Gara .(2012). Forest Health and Protection,University of Washington,Waveland Press.

2- Smith, W. H. (1970). Tree Pathology. A short introduction, The Mechanisms and control of pathological Stresses of forest Trees. Academic press, inc. 111 fifth Avenue, New York 10003. printed in U.S.A.

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3- Mason, J. (2004) Nursery Management, National library of Australia catalog- in-publication entry.

4- Duryea, Mary L., and Thomas D. Landis (eds.). 1984. Forest Nursery Manual: Production of Bareroot Seedlings. Martinus Nijhoff/Dr W. Junk Publishers, The Hague/Boston/Lancaster, for Forest Research Laboratory, Oregon State University, Corvallis. 386 p.

5- Hartmann, H. T., Kester, D. E. and Davies, F. T. (1990) Plant propagation Principles and Practices, Texas A & M University College Station.

Arabic References:

1- سعيد, عادل خضرو علي حسين عبدالله الدوري (1982) المشاتل و تكثير النباتات, وزارة التعليم العالي والبحث العلمي, قسم البستنة, كلية الزراعة والغابات, جامعة الموصل, ص 200.

2- ابراهيم, عاطف محمد و محمد السيد هيكل (1995) مشاتل اثمار المحاصيل البستانية, منشأة المعارف بالاسكندرية, قسم البساتين, كلية الزراعة, جامعة الاسكندرية, ص 534.

3- عبدالله, ياووز شفيق (1988) اسس تنمية الغابات, وزارة التعليم العالي والبحث العلمي, قسم الغابات, كلية الزراعة والغابات, جامعة الموصل, ص 336.

16. Teachers name for this course:

Dr. Sherzad Omar Hamad Theory part
Asst. lecturer. Zhala baqi taha Practical part

17-Course program By zhala baqi taha

1 st Week	- Definition of Nursery, The purpose of establishment of nursery, Sections and types of nurseries, Classification of nurseries, General conditions necessary for the establishment of nurseries, Tools and equipment of nursery.
2 nd Week	- The steps that use for the nursery establishment, Structures for nursery, Seed beds, Types of seed beds, Factors affecting on length and width of seed beds, Following points should take into consideration when establishment seed beds.
3 rd Week	- Seeding in the Nurseries, Depth of seed sowing, Time of seeding, Transplanting, The most important goals and benefits of the transplanting, The most important points that must be taken into account during the transplanting, Irrigation in the nursery, Grubbing and weeding, Fertilization.

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4th Week	<ul style="list-style-type: none"> - Visit the students to the Central Forest Nursery Erbil. - Visit the students to the Garden engineering nursery. 	
5th Week	- Seed beds protection, Methods the controlling of biotic factor, Methods the controlling of non-biotic factor, Methods used to heat the warm seed beds, Insect pests and disease resistance.	
6th Week	- The First Examination.	
7th Week	- Practical application in laboratory (5), Effect of seed pre-treatment on the germination of forest tree seeds.	
8th Week	- Sowing in the nursery, Common Possible Errors in Nursery Activities, Nursery Disease and their Management, Integrated Nursery Disease Management, Nursery Pests and their Management.	
9th Week	- Practical application in Grdarasha field, cleaning, grubbing and weeding, holding, soak and soil adjustment, Transplanting the seedlings in the plastic house.	
10th Week	- Practical application in Grdarasha field, sowing the type of forest tree seeds in a way of (Broadcast and Lines) with sowing the seeds in black plastic bag and watering the seeds and seedlings.	
11th Week	- Common and Scientific Names of Trees and Shrubs in Kurdistan Region Iraq, Conifer Trees or Needle Trees, Evergreen coniferous trees and Deciduous coniferous Trees.	
12th Week	- Common and Scientific Names of Trees and Shrubs in Kurdistan Region Iraq, Broadleaved Trees, Evergreen Broadleaved Trees, Deciduous Broadleaved Trees.	
13th Week	- The Second Examination.	
18. Practical Topics		
<ol style="list-style-type: none"> 1- Visit the students to the Central Forest Nursery Erbil. 2- Visit the students to the Garden engineering nursery. 3- Practical application in laboratory (5). 4- Practical application in Grdarasha field. 		Supervised by assistant lecturer zhala baqi taha

19. Examinations:

Type of examination Questions:

1- Definitions:

Forest nursery - Seed bed - Transplanting

2- Advantage:

- Advantages of grubbing and weeding operation for plants in nurseries.

3- Sign **True** or **False** for each sentence and correct the false word.

1- Horticulture Nurseries, this type of Nurseries, use for production and breeding of all types of seedlings. (False) Forest Nurseries

2- Transplanting in Deciduous should be before the Conifers. (True)

4- Fill the following blanks with the correct word.

- There are two types of seed beds 1----- seed beds 2----- seed beds. 1-Raised (high) 2- Low

5- Write about:

- The most important goals and benefits of the transplanting.

6- Answer below statements:

- Classification of nurseries according to the use and purpose of its establishment.

7- Enumerate the following:

- Methods of seed sowing in nursery beds.

8- Complete the following table

9- Multiple choices

- Classification of nurseries according to the specialization and agricultural crops production

A. Central Nurseries

B. Ornamental nursery

C. Private nurseries

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20. Extra notes:

Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks.

21. Peer review

پیداچونہوہی ھاوہل

This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.

(A peer is person who has enough knowledge about the subject you are teaching; he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).

ئەم كۆرسىبووكە دەبىت لەلاپەن ھاوہلئىكى ئەكادىمىيە سەمىر بىكرىت و ناوہرۆكى بابەتەكانى كۆرسەكە پەسەند بىكات و جەند ووشەپەك بنووسىت لەسەر شىاوى ناوہرۆكى كۆرسەكە و واژووى لەسەر بىكات.
ھاوہل ئەو كەسەيە كە زانىارى ھەبىت لەسەر كۆرسەكە و دەبىت پلەى زانستى لە ماموسنا كەمتر نەبىت.