Ministry of Higher Education and Scientific research



Salahaddin University College of Agricultural Engineering Sciences Forestry Department Subject: Forest Ecology / Practical Course Book – 2nd year students Lecturer's name: Assist L., Shaymaa H. Mahmood Academic Year: Spring Semester 2022-2023

Practical part

Monday / 10.30 am - 1.30 am G (A) (Lab 5)

1.30 am - 4.30 pm G (B) (Lab 5)

Directorate of Quality Assurance and Accreditation

Course Book of (2nd Stage Forestry)

1. Course name	Forest Ecology / Practical
2. Lecturer in charge	Shaymaa H. Mahmood
3. Department/ College	Forestry/Agricultural Engineering Sciences
4. Contact	E-mail: shaymaa.mahmood @su.edu.krd
	Tel: 07507301914
5. Time (in hours) per week	Practical: 6 hours / week
6. Office hours	10 - 12 am on sunday
7. Teacher's academic profile	I completed my (B.Sc.) in Salahaddin University - Erbil, Iraq – Agriculture College - Department of Forest in 2013. I got my (M.Sc.) in Salahaddin University - Erbil, Iraq – Agriculture College - Forestry Department in 2017 and my specialize is Wood Industry. Now a day I am working as assistant lecturer and department decision maker in agriculture engineering science college-Forestry department.
8. Keywords	Water content, Tree species, Ecosystems, a biotic factors

9. Course overview:

As its subtitle implies, the aim of this subject is to provide within a relatively small compass an account of the structure of forests. The relationships between the main groupings of organisms which live within them, and a discussion of the significance of plant and animal diversity at both the community and regional level. There is highlighting on forest processes, especially those involving the flow of energy and cycling of nutrients. An attempt has also been made to show how communities dominated by trees, together with their constituent animals and plants, have gradually evolved during geological time. To understanding of the fundamental concepts of the main biotic factors effect on growth of trees and forest development. The main sound knowledge of the major areas of are included forest development , plant life forms and biological spectra, Light and shade, Water, Temperature and pollutant influences on tree growth, Altitudinal zonation and timberlines, and Ecology of mature and over mature trees.

10. Course objective:

Taking a functional rather than an ecosystem about forests, This subject provides a brief account of the structure of woodlands and forests. Using examples from around different locations of Erbil provenance from Centre to mountain areas of forests. The course explains tree classification to their requirement to different abiotic factors such as water, light etc., and the structure of the forest soil and the roots system; how the main groups of organisms that live within them interact both positively and negatively. There is particular emphasis on woodland and forest processes, especially those involving the flow and cycling of nutrients, as well as the dynamics of wooded areas, considering how and why they have changed through geological time and continue to do so. This clear, non-technical text will be of interest to undergraduates, foresters, ecologists. Forest Ecology is a most important science because it is directly linked to human life. The goal of this subject itself as linked to climate factors closely linked with tree growth, because of that we need to measure climate elements during planting any plants.

11. Student's obligation

Students will be asked to prepare research papers on selective topics. There will be classroom discussions and the lecture will give enough background to evaluate problems sets, and different issues discussed throughout the course. Students are required to conduct two exams in Fall semester in Forestry Ecology practical part.

12. 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.

13. Assessment scheme

They also require bringing a report in this semester. 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 (20) marks and (15) marks for student activities for practical part with general total (35) marks.

1-	student activities	15
2-	Test	20
3-	Total	35

Total

14. Course Reading List and References:

Thomas, P., & Packham, J. (2007). Ecology of woodlands and forests: description, dynamics and diversity. Cambridge University Press.

35

- > Hytteborn, H., & Verwijst, T. (2011). The importance of gaps and dwarf trees in the regeneration of Swedish spruce forests: the origin and content of Sernander's (1936) gap dynamics theory. Scandinavian Journal of Forest Research, 26(S10), 3-16.
- Fuentes, M., Niklasson, M., Drobyshev, I., & Karlsson, M. (2010). Tree mortality in a seminatural beech forest in SW Sweden. Ecological Bulletins, 53, 117-129.

15. Teachers name for this course:

lecturer. Dr. Zana A. Ahmed Lak / Theory part

Asst. lecturer. Shaymaa H. Mahmood / Practical part

16. Course program

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Week: 1	Meteorology	
Week: 2	Light	
Week: 3	Temperature	
Week: 4	Moisture	
Week: 5	First exam	
Week: 6	Visit Khanzad plantation	
Week: 7	Visit Sami Abdul-Rahman park	
Week: 8	Wind	
Week: 9	Forest Fire	
Week: 10	Forest Insects	
Week: 11	Insects and Environment	
Week: 12	Second exam	
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17. Practical Topics

- 1- First scientific trip to Sami Abdul-Rahman park.
- 2- Second scientific trip to natural forest in Safeen mountain.
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18. Examinations: Type of examination Questions:

1-Define the following terms. (Wind – Meteorology – Climate - Forest fire)

Forest fire: is a fire that spread freedom and burning weeds, bushes, shrubs and terrestrial algae.

2- Multiple choices

This medium consists of layer of solid rock of the earth. (Pedosphere, Atmosphere, Lithosphere) Lithosphere

3- Correct the underlined parts if they are falls:

Plants utilize (0.2 - 0.2%) of moisture that is taken from ground in the construction processes. False (0.1-0.3 %)

4- Answer the <u>True</u> or <u>False</u> to the following.

-Plants utilize of visible light in photosynthesis process especially blue and green color.

-If photosynthesis ratio is equal to respiration ratio, plant growth will occur.

5- Fill the blanks with suitable words: -

Maximum temperature is the temperature that stop physiology phenomenon which is between C°

40 - 50 C°

6- Answer the following

1-Why consider the maximum moisture is danger for trees and plants?

2- Differences between calm wind and storm wind.

3- Enumerate the most important causes to forest fire. (Only 5)

7- Write Scientific name for each of the following. (Only tow example)

-Tolerant trees to shade.

Tilia spp Thuja occidentalis

19. Extra notes:

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

20. Peer review:

This course book has to be reviewed and signed by a peer. The peer approves the contents of your cou 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).