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**Department of Forestry**

**College of Agriculture**

**University of Salahaddin**

**Subject: Agroforestry**

**Course Book – (Year, 3)**

**Lecturer's name: Hardy Kakakhan Awla Shekhany – Lecturer**

 **Shilan Abdulrahman Mirsar – Assist Lecturer**

**Academic Year: 2018-2019**

**Course Book**

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| **1. Course name** | **Second Course ( Dendrology)** |
| **2. Lecturer in charge** | **Hardy K. Awla Shekhany + Shilan A. Mirser** |
| **3. Department/ College** | **Forestry/Agriculture** |
| **4. Contact** | **e-mail:** **hardy.awla@su.edu.krd** **+** **Shilan.mirsar@su.edu.krd****Tel: +964 (0)750 483 8690 - 07504492684** |
| **5. Time (in hours) per week**  | **theory:** 2 hours, per week **practical:** 6 hours per week |
| **6. Office hours** | **Sunday until Thursday 9:00 a.m. – 1:00 p.m.** |
| **7. Course code** |  |
| **8. Teacher’s academic profile**  |  **1- Hardy Kakakhan Awla****I have finished my B.Sc. in Koya University – Agriculture college - Forestry Department 2008; I have got M.Sc. in Salahaddin University - Hawler – Agriculture college – Forestry and Horticulture department 2014. Nowadays I am working as Lecturer in Department Forestry- college of agriculture and now I am PhD candidate.****2- Shilan A Mirsar*** **B.Sc:Plant Production / College of Agriculture (2001-2002) / University of Salahaddin / Kurdistan Region/ Iraq.**
* **M.Sc:Forestry/ Agroforestry/ College of Agriculture (2007) University of Wales, Bangor/ UK**

**Work History:**1. **College of Agriculture, Forestry department/ University of Salahaddin /Iraq**

**from 2008 until date ( Assistant Lecturer)****As an assistant lecturer, I am teaching Agroforestry (Practical) for Third stage students/ Forestry Department**  |
| **9. Keywords** |  |
| **10. Course overview:**  Forests are the main source of many products and the most important wood as a raw material used in many important industries such as the production a major forest in addition to the benefits of other important preventive regard to the maintenance of soil and water sources, and because of increased population density in the world and the worsening problems of industrial pollution due to emissions from factories, cars and increasing problems climate change, drought and desertification in the world, where landscaping is one of the most important steps important to confront these dangers and increasing plant density and air purifier air and prevent water and wind erosion. |
| **11. Course objective:**This course aims to acquire the student the practical skills which are related to the theoretical part of the Agroforestry course, in which aims to: * Introduce students to the importance of Agroforestry system and why it needs to be studied.
* Enable students to understand the importance of Agroforestry that happens in the area.
* Make students capable of understanding how systems classify, from area to another area.
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| **12. 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. To get the best of the course, it is suggested that you attend classes as much as possible, read the required lectures, teacher's notes regularly as all of them are foundations for the course. Lecture's notes are for supporting and not for submitting the reading material including the hand-outs. Try as much as possible to participate in classroom discussions, preparing the assignments given in the course. Using quiz, exams. The objective is for the student to understand what is agroforestry? Types of Agroforestry and How we can do Agroforestry in our region? They have to do at least one type of agroforestry in practical in field. |
| **13. Forms of teaching**Different forms of teaching will be used to reach the objectives of the course: 'power point presentations for the head titles and definitions and summary of conclusions, give the students lecture as fascicule also using the white board to clear the figures and meaning of words….. ,  |
| **14. Assessment scheme****Note:** Number of exams and lectures for each exam did not specify. **Each student attends a report within the lecture program at the end of the course.**‌ **Theoretical part practical part** ‌ **1- student activities 5 5** **2- Test 20 10** **3- total 25 15**  **4- Final Examination 40 20** **Total 65 35 = 100**  |
| **15. Student learning outcome:**At the end of the course the student will learn about all those question which related of Identification trees such as:What is dendrology? Which classify practice is worse, selective name or scientific name of tree? Dendrology and their benefits and the relationship with the forest and now they are adapted with the environment and their movement for survival and protection from. |
| **16. Course Reading List and References‌:**1- Govindan, K. and Thirumurugan, V. (2003). PRINCIPLES AND PRACTICES OF DRY LAND AGRICULTURE.2- Panda. S. C. (2004). DRY LAND AGRICULTURE. *Agrobios (India).*3- Young, Anthony. (1997). AGROFORESTRY FOR SOIL MANAGEMENT. Second Edition. CAB INTERNATIONAL in *association* with International Centre for Research in Agroforestry. |
| **17. Theory Topics:** | **Lecturer's name** |
| In this section The lecturer shall write titles of all theory topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture**1st week:**Definition of Agroforestry, Objective and characteristics of the system, Benefits of Agroforestry (Short term benefits from agroforestry, Long term benefits from agroforestry) **2nd week:** Adverse effects of trees on soil, Suitability characteristics of the tree species for agroforestry.**3rd week:** Classification of agroforestry system**4th week:** Classification of agroforestry system**5th week:** Social forestry, Principles of social forestry,Objectives of Social forestry**6th week:** Components of social forestry programmes, Advantages of social forestry, Promising multipurpose trees for dry lands**7th week:** Multiple benefits of multipurpose tree species1. Protective or environmental benefits
2. Productive benefits
3. Socio economic benefits

**8th week:** Selection of multipurpose trees for dry lands, Promising fruit trees for dry lands**9th week:** Agroforestry options in dry lands, Nursery raising for agroforestry and watersheds, Direct seeding in arid and semi arid region**10th week**: Prerequisites for direct seeding in dry lands, Nursery techniques in agroforestry, Site selection for nursery, Water and its quality for raising nursery, Nursery area**11th week**: Seeds, Seed storage, Pre-treatment of seeds (Physical method, Chemical method, Biochemical method), **12thweek**: Soil preparation in nursery beds. Preparation of seedbeds, Sowing in nursery, Preparation of polythene bag beds, Pot mixture preparation, Transplanting in polythene bags, After care of nursery seedlings, Fertilizer application**13th week**: Planting and after care in agroforestry under dry lands, Site preparation, Spacing, Planting , Season of planting, Tending, Protection, Soil and water conservation measures in agroforestry***Week10:***  ----second semester exam | **Hardy K. Awla Shekhany** (2 hrs) |
| **18. Practical Topics (If there is any)** | **Lecturer's name** |
| **1st week:** Main feature of Agroforestry, Necessity of Agroforestry, Good stewardship, Benefits of agroforestry on soil**2nd week:** Visiting field (Grdarasha) and preparing canals**3rdweek:** Visiting the field (Grdarasha) and planting forest seedlings**4thweek:** Visiting the field (Grdarasha) and planting crop seeds**5thweek:** Types of agroforestry1- Silvoculture**6thweek:** Visiting the field (Grdarasha) and planting vegetable seedlings**7thweek:** 2- Silvopasture**8thweek:** Visiting the field (Grdarasha) and Weeding and Replanting process**9thweek:** 3- Forest farming**10thweek:** Scientific trip to Hojran**11thweek**: Visiting Park**12thweek**: Scientific trip to Mergasoor**13th week**: 4- Forest gardening | Shilan A. Mirsar (3 hrs) |
| **19. Examinations:****2** Exams, after each (4) lectures students have an examIn regard to this subject the type of exam will be as follow:**1- Definitions:**e.g.: Agroforestry**2- Fill the following blanks with the correct word:**e.g.: The system of agroforestry that we used in the field (Grdarasha) was -----------------.Answer :) Silvoculture)**3- List:**e.g.: Types of agroforestry**4- Write:**a: benefits or advantagesb: adverse or disadvantagesc: objectives or characteristics d: drawbackse.g.: Write benefits of agroforestry system**5- Write true or false for each sentence and correct the false sentences:**e.g.: In agroforestry system the rows are best aligned East-West.Answer (false, North-South)**6- Write scientific names and family names for the plants or any Question about trip**e.g.: Casuarina**7- Choose the correct option:**e.g.: Growing agricultural crops including legumes along with tree crops in the same piece of agricultural land simultaneously is called -------------------------- . (Silvoculture, Forest farming)Answer (Silvoculture)**8- Write examples for the following:**e.g: Suitable trees species for block plantingAnswer (Eucalyptus *(Eucalyptus spp)*, Poplar *(Popuusspp)*, Melia (*Meliaazadirachta*), and Acacia (*Acacia nilotica*var, *indica*).**9- Question about trips:**  |
| **20. Extra notes:** |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ**   |