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**Department of Forestry**

**College of Agricultural Engineering Sciences University of Salahaddin**

**Subject: Forest Utilization**

**Course Book: (Year, 4)**

**Theory Lecturer's name: MSc, Shaima Abdulkhaliq Karim**

**Practical Lecturer's name: Shaima Abdulkhaliq Karim Academic Year: Fall Semester 2023-2024**

**Course Book**

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| **1. Course name** | **Forest utilization** |
| **2. Lecturer in charge** | **Shaima Abdulkhaliq Karim** |
| **3. Department/ College** | **Forestry/Agricultural Engineering sciences** |
| **4. Contact** | **e-mail : shaima.karim@su.edu.krd** |
| **5. Time (in hours) per week**  | **theory: 2 hours per week** **practical: 3 hours per week**  |
| **6. Office hours** | **10- 12 a.m.** |
| **7. Teacher’s academic profile**  |  |
| **8. Keywords** | **Forest resource, tree felling, log bucking, extraction, transportation**  |
| **9. Course overview:** Wood products play an important role in our everyday lives. Maybe for you it's a family heirloom, a beautiful table or cabinet, but have you ever considered that piece of furniture might have come from a forest near you? Forest Utilization is that branch of Forestry which deals with the most suitable andmost beneficial methods by which forest produce is collected and converted into usefulproducts. * It deals with harvest, processing and disposal of forest.

 It deals with the felling of forest crops, transportation to the market, their processing into various usable commodities and distribution to their ultimate use. Its copes covers not only―Major Forest Produce‖ ,i.e. ,timber and fuel, but also all other forest products termed as Non Timber Forest Produce ‖like grasses, bamboos, fruits, leaves, barks, animals, vegetables and minerals. |
| **10. Course objective:**The course is aim teaching students the concept of forest harvesting. At the end of the course, the students will:1- Have the knowledge about harvesting operation and its importance, types and planning harvesting …..ets. 2-Understand methods required in felling, bucking, piling, delimbing, …ets and processing of wood.3-Know the various techniques used in production of wood. |
| **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. 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 handouts. Try as much as possible to participate in classroom discussions, preparing the assignments given in the course. Using quiz, exams. |
| **12. 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….. ,  |
| **13. Assessment scheme**

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| --- | --- | --- | --- | --- | --- | --- |
|  | First exam | Second exam | Quiz, activity and report | Annualaverage | Final exam | Total |
| Theoretical part | 5 | 5 | 5 | 15 | 50 |
| Practical part | 12.5 | 12.5 | 10 | 35 | 0 |
|  | **50** | **50** | **100** |

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| **14. Student learning outcome:**At the end of the course the student will learn about all those question which related of timber harvesting such as:What is Logging? Which logging practice is worse, selective logging or clear cutting? Why does logging happen? Can we use other materials for building homes and furniture? What are some of the effects of logging irresponsibly? |
| **15. Course Reading List and References‌:**▪ **Useful references: -** 1- Abd Ali, B. , W. Kasir, R. Al-Khaffaf (1993). Forest Utilization . Book home publisher institute, College of Agriculture , University of Mosul , Iraq. P. 319. 2-Al-Saeed, A. (2006). Forest trees Sliviculture and Utilization.3third Edition. Monchaa Al-Ma'arf in Alexandria, P.417.3- Wakerman, A. , W. Hagensten and A. Michell (1966). Harvesting Timber Crops.2nd Edition. McGraw-Hill Book Company .P.540.▪ Magazines and reviewMagazines and review (internet):<https://en.wikipedia.org/wiki/logging><https://www.sciencedaily.com/terms/logging.htm><http://www.futureforestinc.com/six-benefits-of-logging-forests/><http://www.oregonloggers.org/Forest_Logging_Technology.aspx><http://www.forestsmonitor.org/en/reports/550066/550082> |
| **17. Theory Topics:** | **Lecturer's name** |
| ***Week: 1*** Forest resources, conceptual of forest utilization, the goal of forestry, important of forest utilization, Forest harvesting objective, Continuous & periodical harvesting.***Week2:*** planning the timber harvest, harvesting-area data, and types of operation possible, factors that influence the choice of operation method. ***Week3:*** principles and practice in filling trees, factors affecting selection of trees for harvesting, cutting instruction on minimum size. ***Week4:*** organization of cutting operation, designation of felling area, filling technique, making the undercut, severing the trees ***Week5:*** bucking felled trees, factors affecting bucking for sawlogs, full-length utilization, trim allowance, log splitting, forked trees, reduction of cull…. ***Week6:***----first semester exam.***Week7:*** Full size utilization, bucking to the highest value.***Week8:***  bunching, skidding, piling.***Week9***: measurement of forest products***Week10***: the trees movement form, land transportation from the forest. ***Week11***: costs and records***Week12:***  ----second semester exam | Shaima Abdulkhaliq karim(2hr.) |
| **18. Practical Topics (If there is any)** | **Lecturer's name** |
| ***Week1***: Identification on the tools and equipment’s for harvesting operation***Week2:*** Care of tools, other hand tools, methods of timber harvesting.***Week3***: Felling technique, types of undercut, back cutting, Stump height.***Week4:*** ----First mid-semester exam.***Week5:*** Limbing (Delimbing), bucking felled trees, bucking techniques***Week6:*** hewing, bunching, by felling pattern, by hand assembly, by animals, by tractor***Week7:*** visiting artificial forest ***Week8:*** forest utilization (video film) ***Week9:*** ----Second mid-semester exam***Week10:*** visiting local wood market . | Shaima Abdulkhaliq Karim |
| **19. Examinations:**q/ Enumerate the following:- 1- The importance of the forest utilization.2- Types of highly mechanized equipment.3- Factors affecting selection of trees for harvesting.4- Methods of primary transportation (Extraction). q/explain briefly planning the timber harvest? Then write the objectives of a timber survey. answer with (T) or (F) and correct the false:- 1- Short wood is the method which commonly used for the production of saw log wood.2- Trim allowance range around 7-10 inches for each 20 feet of log.3- We can be prevented splitting the log by providing a support beneath the hanging end of an unsupported log.4- Extraction distance is the distance between the site of felling trees and the side near the road in the forest or stand.  |
| **20. Extra notes:** |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ**   |