Course Description Form Wood Science

1. Course Name:
Wood Science
2. Course Code:
WOSC303
3. Semester / Year:
2nd Semester / 2024-2025
4. Description Preparation Date:
1 / 2 / 2025
5. Available Attendance Forms:
Built-in
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Haees Sayel Jarjes Email: haees_sayel@uomosul.edu.iq Name: Hanan Ghanem Saadallah

8. Course Objectives

Theory : The learner should be able to define the concept of wood science and wood qualitie •Choose the appropriateness of the factors affecting the anatomical properties of woo •Differentiating between soft woods and hardwoods •Understand the basics of wood installatio •Distinguishing between the composition soft and hardwoods •Familiarity with the chemical compositio of wood - preparing agricultural cadres an forestry engineers capable of forest management and wood technology scienc Preparing qualified agricultural cadres to scientific programs that contribute to... •Treating wood deterioration and disease and contributing to the exploitation of woo on scientific grounds • Improving the quality of wood, making optimal use of it, knowing its natural and unnatural defects, wood composition, and exploiting quantities of wood that may be damaged.	Practical : •Enable the student to practically examine wood compositio and address wood problems and defects paring qualified cadres to use scientific programs, • owing up on the performance of graduates in the field of od uses, and raising the economic value of local wood learner's awareness of the factors affecting the properties • vood ermine the appropriate type of wood for construction and • er making uses omprehensive study of various types of wood and their • ference in industries according to their structural, anatomical l physical properties • The student should be able to separate wood cells by mechanical and chemical methods

9. Teaching and Learning Strategies

Strategy	-Interactive lecture

	-Brainstorming -Dialogue and discussion - Assigning tasks and reporting

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Practical.	Theory: A1: Knows the general characteristics of wood - learns abo hardwoods - softwoods - learn about the types o woody plants Practical: B8 Apply the method of preparing sampl and preparing th for microscopic examination	Theory: Introduction-Characteristics of wood practical : The Wood	Theory : In-person lectures Practical : In-person lectures w clarification of the sections with picture and using wood samples in the laboratory	Discussions and interaction in the lect and a short test
2	2Theory 3 Practical	Theory: A2 Identify soft woods and hard woods. B2 shows what is the wood of the branches and the wood of the stem practical : B9 examines slid of xylem cells separated by a chemical method using an optical microscope	Theory: General appearance of wood - softwood and hardwood: practical : Wood, its properties uses and types	Theory : In-person lectures Practical : In-person lectures v field visits	Quotes and interacti in the lecture Short test
3	2Theory 3 Practical	Theory: A3 Explains the vascular cambiu Explains the stag of growth of vascular cambiu cells practical:	Theory: Characteristics of wood - vascular cambium: practical : Practical lesson in laboratory	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing

		B10 examines sli of mechanically separated xylem cells using an optical microsco			
4	2Theory 3 Practical	Theory: A4Distinguishes trees according t the formation of heartwood - distinguishes - distinguishes sapwood and heartwood practical : C1 Enumerates t uses of wood	Theory: Origin of wood-producing plants practical : Wood features	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Field evaluation Direct drawing
5	2Theory 3 Practical	Theory: A5 Explain how t stem is formed - Explain how heartwood is formed practical : B6Distinguish between spring a autumn woodb6	Theory: Tree growth and wo formation Phenotypic practical : characteristics of wo	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
6	2Theory 3 Practical	Theory: A6 Understands t types of cells tha make up soft woo mortises - crassu spiral thickening trabeculae practical : A13 Learn about wood, its characteristics a chemical composition	Theory: Anatomical structur of soft wood 1 practical : Phenotypic characteristics of wo	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	rt test Direct drawing
7	2Theory 3 Practical	Theory: A7 Understands t resinous longitudinal bronchioles - the striped longitudi bronchioles - the	Theory: Anatomical structur of soft wood 2 practical : Practical lesson in laboratory	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing

		longitudinal parenchyma cells the ray parenchy medulla - and the intersection field practical : A14 Differentia between woody a non-woody plant			
8	2Theory 3 Pract	Theory: A8 Understands t types of hardwoo cells - distinguish hardwood according to the size of the stoma and the way they are distributed within the growt ring practical : A15 Learn ab the microscope, parts, and how use it	Theory: Anatomical structur of hardwoods 1 practical : Using differ technical methods microscopic studies wood	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
9	2Theory 3 Practical	Theory: 9A is familiar wi the structures found in vessel elements - the tracheids of hardwoods - and the types of longitudinal parenchyma. practical : A16 Learn about the method of cutting wooden models and preparing chemi solutions for the chemical maceration meth	Theory: Anatomical structur of hardwoods 2 practical : Using different technical methods i microscopic studies wood	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
10	2Theory 3 Practical	Theory: D1 understands t structure of the c wall - the structu	Theory: Cell wall compositio in woody plants practical :	Theory : In-person lectures w field visits Practical :	Short test Direct drawing

		of microfibrils - understands the secondary wall o the cell practical : A17 Familiari with the anatom characteristics wood and meth of measuring the	Using different technical methods i microscopic studies wood	In-person lectures w field visits	
11	2Theory 3 Practical	Theory: A10 Understands the chemical components of wood - the basic structural components of th wood cell wall - cellulose - hemicellulose - lignin B3 distinguishes between the cells that make up xyl under the microscope practical :	Theory: Chemical compositi of wood practical : Practical lesson in th laboratory	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
12	2Theory 3 Practical	Theory: A11 covers the physical properti of wood: color, luster, odor, taste veining, weight a hardness. practical : B3 distinguishes between the cells that make up the xylem under the microscope	Theory: Distinguish betweer the cells that make u xylem under a microscope practical : Practical lesson in laboratory	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
13	2Theory 3 Practical	Theory: B1 shows what is the wood of the branches and the wood of the stem practical: 4 B Distinguish	Theory: Variation of anatomical, chemica and physical properties in stems and branches practical:	Theory : In-person lectures w field visits Practical: In-person lectures w field visits	Short test Direct drawing

		between the apparent characteristics of wood	Practical lesson in laboratory		
14	2Theory 3 Practical	Theory: A12 Recognizes natural defects in wood and natura growth phenome practical: B5Distinguish between annual growth rings	Theory: Natural defects in wood Practical:: Anatomical features	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
15	2Theory 3 Practical	Theory: A12 Recognizes natural defects in wood and natura growth phenome practical : D2 Calculates the dimensions of th wood cells that make up the woo tissue and the specific gravity o the wood sample	Theory: Natural growth phenomena Practical: Practical lesson in laboratory	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Semester exam 2, f exam

11. Course Evaluation

	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	The book Wood as a Raw Material, by George Tsumis, translated by Dr. Walid Aboudi Kassir and others - Universit Press Directorate - 1985
Main references (sources)	

Recommended books and references (scientific journals, reports...)	Wood technology book - written by Dr. Latif Haji Dr. Samir Fouad
Electronic References, Websites	

Theoretical subject teacher: Dr. Haees Sayel Jarjes

Practical subject teacher: M.M. Hanan Ghanem Saadallah

Chairman of the Scientific Committee: Prof. Dr. Samoud Hussein Ali

Head of the Department of Forestry Sciences: Prof. Dr. Samoud Hussein Ali