Course Description Form

1. Course Name:
Wood Presservation
2. Course Code:
WOPR402
3. Semester / Year:
Spring semester / 2024-2025
4. Description Preparation Date:
1 / 2 / 2025
5. Available Attendance Forms:
Integrated
6. Number of Credit Hours (Total) / Number of Units (Total)
The total number of hours is 75 hours 2 Theoretical + 3 practical /3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Karam Ali Younus ALtaee Email: karam.youns@uomosul.edu.iq Name: Hanan Ghanem Saadallah

8. Course Objectives

theoretical: - Developing the student's ability to deal with scientific and technical means - Developing the student's ability to deal with the Internet - Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discuss Developing the student's ability to deal economically in the field the job.	Practical : -Developing the student's ability to deal with multiple media. - Developing the student's ability to dialogue and discuss

9. Teaching and Learning Strategies

Strategy	-Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 theoretical 3 practical	theoretical: a1: Definition of wood preservation (what is the definition of wood preservation, what are the methods used in the wood preservation process, what are reasons leading to wood deterioration) b1: Number of distinct features of rotting wood	theoretical: : wood preservation practical : Wood preservation	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue	Exams, Homework, Reports

		practical : a14: What does the science of wood preservation know and what are causes that lead to wood deterioration? a15: What are the types of fungi infect wood? a16: What do we mean by boring insects and what is their effect on wood?		style Practical : Assigning tasks and reports	
2	2 theoretical 3 practical	theoretical: a2: Familiar with drawing standards, their types, and methods of using them practical : b4: apply (use tape) b5: Use (the measuring wheel) b6: Explains (the use of signs) A2: Explains the fungi that cause wood rot (explain the distinctive features of rotting wood, number the distinctive features of rotting wood) b2: Number (the fungi's needs that must be met in order for them to be active and able to infect wood) a3: Explains the conditions or needs that must be met in order for the fungi to become active and be able to infect wood practical : a17: What distinguishes termites compared to ordinary ants? A18: How many types of borers infect forest trees? a19: What is the difference between wood ants, carpenter ants, and honey ants?	Theoretical: Fungi causing rot practical : Wood deterioration due to biological causes	Theory : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
3	2 theoretical 3 practical	theoretical: a4: Explains wood decay (types of wood decay - number of specifications of wood decayed by white rot fungi and their effect on the durability of infected wood) a5: Explains the decay of wood (what are the specifications of wood decayed by brown rot fungi - effect of rot (decay) on the durability of infected wood) practical a20: How can we prevent wood from deteriorating by fire? a21: How is wood affected by	theoretical: Wood rotting practical : Deterioration of wood due to physical reasons	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

		temperature differences? a22: What is the effect of increasing or decreasing moisture content on wood?			
4	2 theoretical 3 practical	theoretical: c1: Compare (the permeability of decayed wood and its ability to absorb - what are the specifications of the hygroscopic property of decayed wood) a6: What are (the types of fungi that infect wood) b3: How to (distinguish between types of fungi) practical : a24: What are (the types of fungi that infect wood) on flat lands? a25: What are the acids that cause wood to deteriorate?	theoretical: Permeability of rotting wood practical : Deterioration of wood due to mechanical reasons	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
5	2 theoretical 3 practical	theoretical: b4: How to distinguish between pigmentary rot and bacterial corrosion b5: Distinguish (between direct indirect fungal infections) practical : a25: What are the acids that cause wood to deteriorate? a26: What are the rules that cause wood to deteriorate? a27: What are the salts that cause wood to deteriorate?	theoretical: Diagnosis of decay in wood practical : Deterioration of wood due to chemical reasons	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
6	2 theoretical 3 practical	theoretical: a7: Learn about (the nature of wood that is resistant to fungal infections wood that contains sapwood heartwood) practical : b6: State (the factors that determine effectiveness of extracts to protect wood) b7: Number of (factors affecting the speed of wood decay - What are factors affecting the speed of wood decay - Explain the factors affecting the catabolism and breakdown of cellulose microorganisms) practical : a28: How do mushrooms feed	theoretical: The natural resistance of wood against decay practical : Fungi causing wood rot	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

		on wood and what are the appropriate conditions for that? a29: What is the optimum moisture content for fungi to feed wood? a30: What is the optimum heat content for fungi to feed on wood?			
7	2 theoretical 3 practical	theoretical: a8: What are (the types of insect orders - how to distinguish between types of insect orders - compare the types of insect orders in terms of damage) Practical: a31: How can fungi obtain oxygen while feeding on wood? a32: What is the ideal pH for fungi that feed on wood? a33: How many types of rotted wood?	Theoretical: Rank the insects practical : Fungi causing wood rot	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
8	2 theoretical 3 practical	theoretical: a9: Explain (the nature of the resistance of the cell wall to injury - the number of types of layers of the cell wall in terms of their resistance to injury) c2: How to distinguish (soil damage to wood - who is responsible wood damage - what are characteristics of the ground) – a scientific visit to distinguish between infected and uninfected wood practical : a34: What do we mean by white rot? a35: What do we mean by brown rot?	theoretical: Wood boring insects practical : Types of rot or decomposition	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
9	2 theoretical 3 practical	theoretical: b8 State (the types of beetles that in wood - what are the damages caused by wood-crushing, wood -eating, and round-headed beetles – how do infestations distinguish between wood-crushing beetles wood-eating beetles) practical a 36: How can we measure the durability of wood? a37: What is permeability in wood and how does it vary depending on the type of wood?	theoretica: Beetles practical : Rot damage	theoretica : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and	Exams, Homework, Reports

				reports	
10	2 theoretical 3 practical	theoretical: a 10: Explains about (borrowed beetles, carpenter ants, and carpenter bees - Explain the damage caused by carpenter ants and carpenter bees - Compare between carpenter ants and carpenter bees) practical : b11: Examine (microbiological corrosion: decay by fungi (white brown rot)) b12: Compare (soft rot and pigmentation (pigmentation and discoloration))	theoretical: Beetles – carpenter ants - carpenter bees practical : Biocorrosion by fungi	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
11	2 theoretical 3 practical	theoretical: a11: Explains (wasps - what are damages that wasps cause to wood - mention the most harmful insect waffles to wood - explain corrosion of marine borers – what are the damages resulting from corrosion of marine borers – how are marine borers affected – what are the means of protection from marine borers) practical : b13: Examine the infestation (corrosion by ground insects and their types - wood-crushing beetles - wood-eating beetles)	theoretical: Wasps - erosion by marine borers practical : Biocorrosion by insects	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
12	2 theoretical 3 practical	theoretical: b9 Non-pressure method for preserving wood - What are materials: What are (the methods used in the wood preservation process? Mention them and explain the best method - Explain number of methods used to preserve wood - Which is more efficient, oil-borne preservatives or water -borne salt materials) practical: b14: Distinguish (round-headed beetles - boring beetles))	theoretical: Methods of preserving wood practical : Biocorrosion by insects	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
13	2 theoretical 3 practical	theoretical: c3: Distinguish between (compressive non-compressive methods for preserving wood - What are the working steps for the wood	theoretical: Methods of preserving wood practical : Biocorrosion by insects	theoretical : -Auditory methods, -Style of writing on	Exams, Homework, Reports

		preservation process - Number of types of pressure methods – What is the best compression method for preserving wood? Mention it with its advantages)) practical : b15: Examines (carpenter ants, carpenter bees and wasps) b16: Identify (marine flukes))	marine organisms	The black board. -Direct dialogue style Practical : Assigning tasks and reports	
14	2 theoretical 3 practical	theoretical: a 12: Select (materials that retard combustion - what are the specifications of materials that retard combustion) C4: How to differentiate between (the most important materials that hinder combustion - a scientific visit to the wood factory to distinguish between the materials used in the wood preservation process) practical : c 5: Characterize (a practical application to identify samples of fungi and insects that infect wood)	theoretical: Combustion obstacles practical : Practical application in the laboratory	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports
15	2 theoretical 3 practical	theoretical: a13: Learn about (the materials used in the wood acetylation process - what are the materials used in the preservation process) b10: Explain (the process of acetylation of wood - what is the importance of acetylation of wood - mention the advantages of the process of acetylation of wood) practical : c6: Identify injuries (field observation to identify injured, rotten deteriorating trees)	theoretical: Acetylation of wood practical : Field observation	theoretical : -Auditory methods, -Style of writing on The black board. -Direct dialogue style Practical : Assigning tasks and reports	Exams, Homework, Reports

11. Course Evaluation

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

			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Wood preservation - Dr. Latif Haji Hassan Al-Najjar - Dr. Sa Fouad Ali Tawfiq
Main references (sources)	Books related to wood preservation
Recommended books and references (scientific journals, reports...)	Scientific journals, reports and research related to wood preservation

Theoretical subject teacher: Dr. Karam Ali Younus ALtaee

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

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