

Course Description Form

1. Course Name:

Care and storage

2. Course Code: HSHC405

3. Semester / Year:

First semester (fall) / 2023-2024 \ 4st

4. Description Preparation Date:

1/2/2024

5. Available Attendance Forms:

Presence

6. Number of Credit Hours (Total) / Number of Units (Total)

2 theoretical hours + 3 practical hours (75 hours) / 3.5 units

7. Course administrator's name (mention all, if more than one name)

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8. Course Objectives

Theoretical

- Enable the student to understand and comprehend what is related to the care and storage of fruits and vegetables
- Enabling the student to know the most important methods of preserving crops and means of protecting them Stores
- Enabling the student to become familiar with the most important methods of storage
- Enabling the student to understand the most important physiological changes that occur in fruits Cold stores
- The student can judge the types of agricultural crops and their readiness damage and its speed

Practical

Enabling the student to become familiar with the most important laboratory methods
In conducting physical, chemical and sensory tests for foods In all stages of manufacturing and storage

9. Teaching and Learning Strategies

Theoretical:

- Interactive lecture
- Brainstorming
- Dialogue and discussion

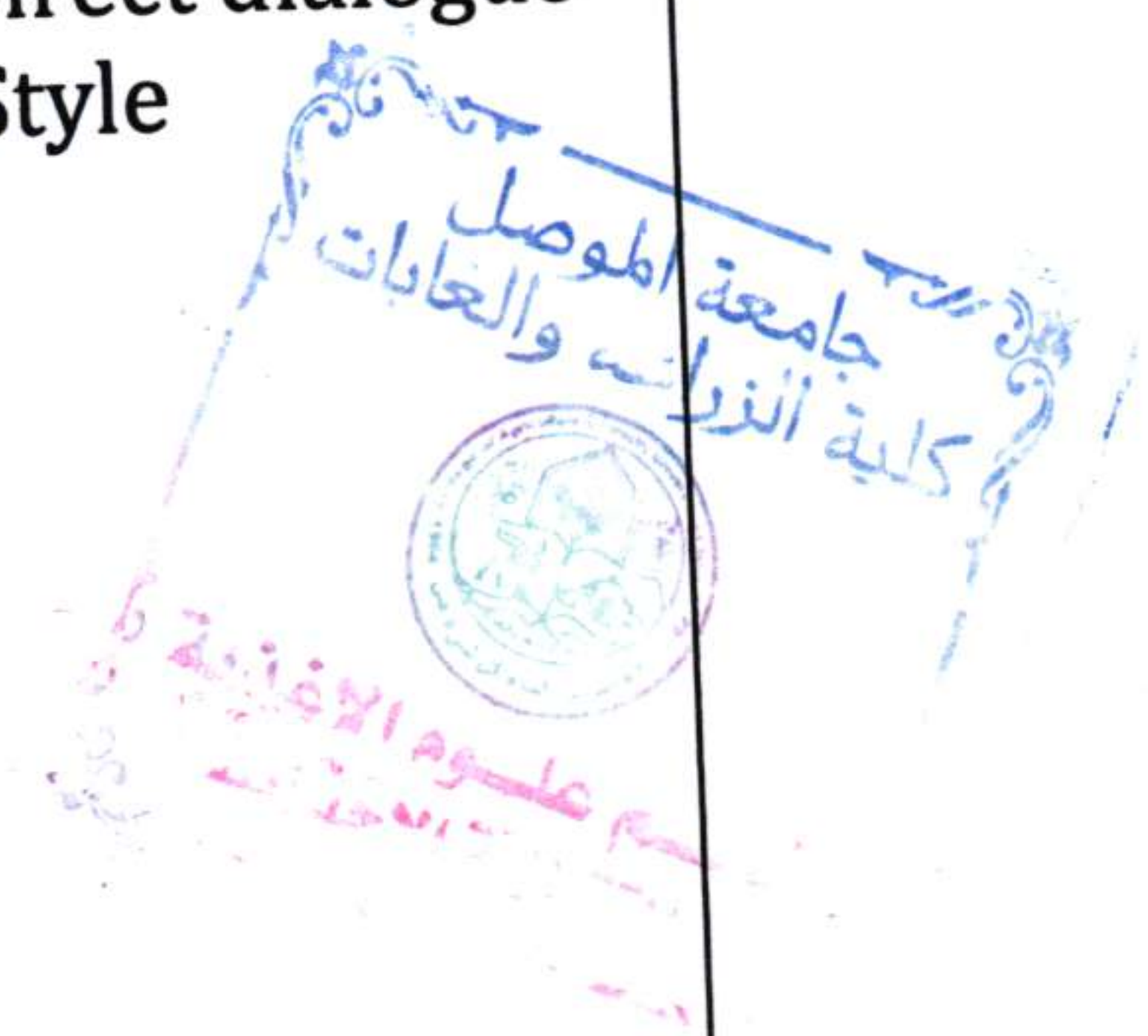
Practical:

- Interactive lecture
- Discussion, dialogue, brainstorming
- Conducting laboratory experiments

- Assigning reports -Conducting monthly and daily examinations	-Assigning reports -Conducting daily and monthly examinations
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical	Theoretical: B1:Explains a concept to the student Care and storage of fruits Chemical and physical composition of fruits and vegetables	THEORETICAL chemical and physiological composition For fruits and vegetables.	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions
	3Practical	Practical A1:student gets to know Chemical composition of fruits	PRACTICAL Study of the chemical composition of fruits	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
2	2Theoretical	THEORETICAL C1:Explains to the student the most important differences in the chemical composition between the different types of vegetables and fruits.	THEORETICAL Refrigerated storage of fruits and vegetables	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions




	3Practical	PRACTICAL c1: The student learns how to estimate moisture.	PRACTICAL Moisture estimation	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
3	2Theoretical	THEORETICAL B2: The student is classified. diabetes in fruit.	THEORETICAL Segregation of fruits according to the growth curve of the fruit	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions
	3Practical	PRACTICAL a2: The student recognizes how to estimate acidity.	PRACTICAL Acidification	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
4	2Theoretical	THEORETICAL A1: The student recognizes the mechanic of picking, genie and grading before storing fruit and vegetables.	THEORETICAL Classification of sug in fruit	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions
	3Practical	PRACTICAL B1: The student's good at categorizing carbohydrates.	PRACTICAL Classification of carbohydrate vehicles	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
5	2Theoretical	THEORETICAL C2: Explains to the student the changes that occur in the pectins in	Theoretical Pectins in fruit	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions



		fruit fruits during storage.			
	3Practical	PRACTICAL a3:The student recognizes ways. Diabetes analysis	PRACTICAL Diabetes analysis methods	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
6	2Theoretical	THEORETICAL C3:Suggest a method for the student Suitable for making fruits More fruits and vegetables Palatability through preservation On flavor and volatile substances in fruits	THEORETICAL Fruit and flying materials fruits	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions
	3Practical	PRACTICAL E1:Determines the most common systems for measuring food colors	PRACTICAL Food colour measurement systems	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
7	2Theoretical	THEORETICAL C4:The student is aware of the most important changes that occur in crop yields after they are cold-stored.	THEORETICAL Vitamins in fruits and vegetables.	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions
	3Practical	PRACTICAL b2:The student's perfect. Understood. Food dyes	PRACTICAL Estimation of food dyes	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions

8	2Theoretical	THEORETICAL A2: The student recognizes the most important changes in mineral salts during the storage of fruits and vegetables.	THEORETICAL Metal salts in fruits and vegetables.	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions
	3Practical	PRACTICAL b3: Applying what you know about chemical reaction dyes, laboratoryly.	PRACTICAL Chemical reaction dyes	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
9	2Theoretical	THEORETICAL B3: The student rules on efficiency. Storage methods on quality Food dyes in Fruit and vegetables.	THEORETICAL Food dyes in fruit. And green.	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions
	3Practical	PRACTICAL c2: It calculates the proportion of carrots in vegetables	PRACTICAL Estimation of carotene rat	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
10	2Theoretical	THEORETICAL A3: Students recognize the most important organic acids found in fruits and vegetables.	THEORETICAL Organ acids.	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions
	3Practical	PRACTICAL c3: It's practically a division. Vitamins to totals by source	PRACTICAL Vitamins and their species.	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
11	2Theoretical	THEORETICAL B4: Student masters a way.	THEORETICAL Fat in crops Industrial	THEORETICAL audio methods,	Shortexams, assignments,

		Fat classification and distribution In the fruits of industrial crops		Writing on the board Direct dialogue style	discussions 
	3Practical	PRACTICAL B4: The student can appreciate the ascorbic acid.	PRACTICAL Methods of estimation of ascorbic acid	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
12	2Theoretical	THEORETICAL E1: Sets out the student's main ways of picking fruit, sorting, phasing and packing.	THEORETICAL Pick, sort, draw and load.	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions
	3Practical	PRACTICAL C4: Shows the abluton method to estimate vitamins.	PRACTICAL Vitamin estimation abluton method.	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
13	2Theoretical	THEORETICAL A4: Students recognize the kinds of ways to grow fruit and its relationship. In the phenomenon of chlamyctic.	THEORETICAL Damage to agricultural crops at Storage	THEORETICAL audio methods, Writing on the board Direct dialogue style	Shortexams, assignments, discussions
	3Practical	c5: Shows how the chromatocravi paper is.	PRACTICAL Cromotokravy, paper	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
14	2Theoretical	THEORETICAL B5: The student is aware of the sources of stimulation of	THEORETICAL Factors affecting breathing speed	THEORETICAL audio methods, Writing on the board	Shortexams, assignments, discussions

		maturity in the fruits and the effect of growth combinations.		Direct dialogue Style	
	3Practical	PRACTICAL c6:Shows how the chromotocravi is, the thin layer, and a visit. Scientific	PRACTICAL Cromotocravi, the thin layer.	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
15	2Theoretical	THEORETICAL A1:The student recognizes the kinds of ways to grow fruit and its relationship with Clamcteric phenomenon.	THEORETICAL Field visit to a storage warehouse Fruit and vegetables, rep By watching the student of the visit in question.	THEORETICAL audio methods, Writing on the board Direct dialogue Style	Shortexams, assignments, discussions
	3Practical	PRACTICAL b5:The student collects information on the effect of certain transactions on the maturity of fruit and vegetable crops.	PRACTICAL The effect of some transactions on maturity Fruit and vegetable crops	PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions

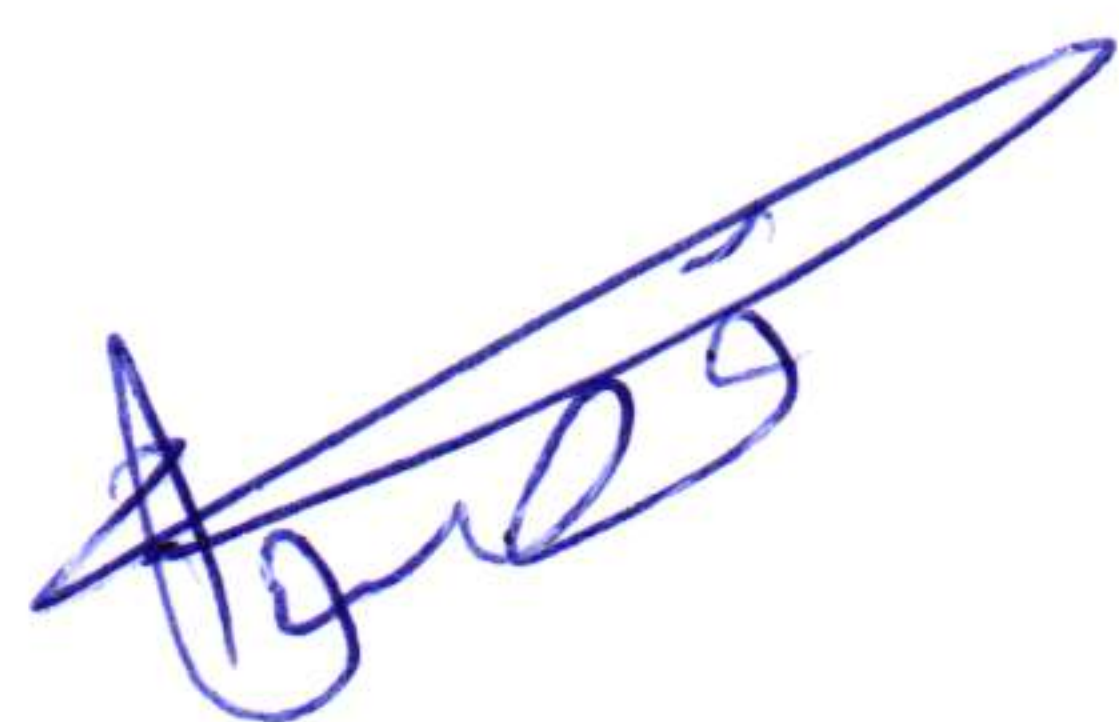
11. Course Evaluation

No.	Evaluation methods	Evaluation date (one week)	Grade	Relative weight %
1	Report 1	fourth week	2.5	2.5
2	Report 2	fifth week	2.5	2.5
3	(1)Quiz	sixth week	2	2
4	(2)Quiz	fourteenth week	2	2
5	(3)Quiz	fifteenth week	1	1
6	Mid 1	sixth week	7.5	7.5
7	Mid2	Eleventh week	7.5	7.5
8	theoretical exams Final	Final semester exams	40	40
9	Practical field project	The fifteenth week	5	5
10	Seminars	The third and fifth week	2	2

11	Practical (1) Quiz	The first week	1	1
12	Practical (2) Quiz	fourth week	0.5	0.5
13	Practical (3) Quiz	The fourteenth week	6.5	6.5
15	Final practical test	Final semester exams	20	20
	Total	100	%100	%100

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	A book of care and storage of fruits and vegetables
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Many articles and research published in Springer, Elsevier, SPRINGER NATURE
Electronic References, Websites	World Health Organization and American Food and Drug Organization



Instructor of theoritical part

Qaswaa yousif jameel



Chairman of the scientific committee

Prof. Dr. Moafak mahmood ahmed



Instructor of practical part
Rowa adil hameed



Head of the department of Food science

Prof. Dr. Sumaya khalaf badawi