Course Description Form

1. Course Name:
Physics Chemistry
2. Course Code:
PHCH108
3. Semester / Year:
Second semester/third stage / 2024-2025
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)
Name: Dr.Saif Ali Mohammed and : Roaa Adel
8. Course Objectives
• Empowering students to understand the concept of physical chemistry and its relationship food products. **• Empowering students to understand the effect of food components on chemical and physica properties.** **• Introducing students to some of the laws of physical chemistry.** **• Introducing students to the types of solutions and their properties.** **• Introducing students to the transformation of energy into its various forms through the law of thermodynamics (the first and second laws) and thermochemistry.** **• Distinguishing between the laws and the units for each law.** **• Developing positive thinking and applying the knowledge gained.** **• The ability to interact with and train with entities outside the university..**
9. Teaching and Learning Strategies
1. Interactive Lecture **2. Brainstorming** **3. Dialogue and Discussion** **4. Assigning Reports** **5. Conducting Monthly and Daily Exams** **6. Self-Learning** **7. Practical Training**
10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	2Theoretical 3Practical	**Theoretical:** **a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famili with physical chemistry and laboratory tests.	**Theoretical:** **The importance physical chemis for food science students** **Practical:** **Surface tension**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
2	2Theoretical 3Practical	**Theoretical:** **a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famil with physical chemis and laboratory tests..	**Theoretical:** **A general reviev of some of the la of physical chemistry.** **Practical:** **Solutions of sol in liquids.**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
3	2Theoretical 3Practical	**Theoretical:** **a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famili with physical chemistry and laboratory tests..	**Theoretical:** **Thermodynamic** **Practical:** **How to measure the concentrat of solutions and understand ideal and non-ideal solutions**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
4	2Theoretical 3Practical	**Theoretical:** **Theoretical:** **a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famil with physical chemis and laboratory tests..	**Theoretical:** **Liquid State** **Practical:** **Learn how express concentration solutions of sol in liquids**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
5	2Theoretical 3Practical	**Theoretical:** **a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famili with physical chemistry and laboratory tests..	**Theoretical:** **Liquid Solutions** **Practical:** **Refraction**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
6	2Theoretical	**Theoretical:**	**Theoretical:**	**THEORETICAL**	Shortexams,

	3Practical	**a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famili with physical chemistry and laboratory tests.	**Liquid solutions Practical: Measuring the refractive index food products using a refractometer**	audio methods, Writing on the boardDirect dialogue style **PRACTICAL** Assigning tasks and reports	assignments, discussions
7	2Theoretical 3Practical	**Theoretical: a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famil with physical chemis and laboratory tests.	**Theoretical: Liquid Solutions Practical: Light Absorptio**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
8	2Theoretical 3Practical	**Theoretical: a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famil with physical chemis and laboratory tests.	**Theoretical: Chemical equilibrium Practical: Learn the basic laws of light absorptio theory and use absorbance me (spectrometer)**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
9	2Theoretical 3Practical	**Theoretical: a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famil with physical chemis and laboratory tests.	**Theoretical: Chemical Equilibrium Practical: Viscos**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
10	2Theoretical 3Practical	**Theoretical: a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famil with physical chemis and laboratory tests.	**Theoretical: Oxidation and Reduction Practical: Learn the laws relative viscos and the fact affecting it**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
11	2Theoretical 3Practical	**Theoretical: a1**: The student learns about physical chemistry and its relationship to fo products..	**Theoretical: Surface Chemist Practical: Viscosity Measurement**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style	Shortexams, assignments, discussions

		PRACTICAL b1: The student is famili with physical chemistry and laboratory tests..	**Using Viscometer**	**PRACTICAL** Assigning tasks and reports	
12	2Theoretical 3Practical	**Theoretical:** **a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famili with physical chemistry and laboratory tests.	**Theoretical:** **Surface Chemist** **Practical:** **Mixing of Liquid**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
13	2Theoretical 3Practical	**Theoretical:** **a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is famili with physical chemistry and laboratory tests.	**Theoretical:** **Milk sugars** **Practical:** **Chemical react rate**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
14	2Theoretical 3Practical	**Theoretical: Theoretic** **a1**: The student learns about physical chemistry and its relationship to fo products.. **PRACTICAL** b1: The student is fami with physical chemis and laboratory tests...	**Theoretical:** **Electrical conductivity in solutions** **Practical:** **Measuring the melting point using a boil tube**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
15	2Theoretical 3Practical	**Theoretical:** **Theoretical:** **C2**: Understands energy biochemistry and the firs and second laws of thermodynamics **PRACTICAL** C4: Understands the mos important changes that occur at solute equilibrium between tw immiscible solvents, solutions of dissociated substances, and a satura solution.	**Theoretical:** **A scientific visit a laboratory or research center, and submitting a report on the student's observations during the aforementioned visit.** **Practical:** **How liquids r and what th products a states are.**	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
11. Course Evaluation					

t	Evaluation methods	Evaluation date (one week)	Grade	Relative weight %
1	Final theoretical report + theoretical practical reports	Theoretical 15 weeks Practical 1-15 weeks	7theoretical + 6 practical	13%
2	Short test 1 Quiz	3 weeks	4theoretical + 2practical	6%
3	Midterm exam (theoretical and practical)	9 weeks	10theoretical + 5 practical	15%
4	Short test 2 Quiz	12 weeks	4 theoretical + 2 practical	6%
5	Final practical test	practical exams week	20	20%
6	Final theoretical exam	theoretical exams week	40	40%
			100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Physical Chemistry of Food Products Assistant Professor Abdul Ali Mahdi Hassan, 1987 Ministry of Higher Education and Scientific Research, Ira
Main references (sources)	• Fundamentals of Physical Chemistı • Prof. Dr. Abdel-Aleem Suleiman A Al-Majd and Prof. Dr. Fatima H Kamal Muhammad. • University Publishing House, Egy 2005 AD • Fundamentals of Physical Chemist 1429 AH, General Organization Technical and Vocational Traini Kingdom of Saudi Arabia
Recommended books and references (scientific journals, reports…)	Foundations of Surface Chemistry Prof. Dr. Mohamed Magdy Wasil, 2007
Electronic References, Websites	https://t.me/agricultural_eng

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Roaa Adel

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Dr. Saif Ali Mohammed

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