Jordan University of Science and Technology

Faculty of Agriculture

Nutrition & Food Technology Department

NF371 Food Chemistry And Analysis
Second Semester 2023-2024

Course Catalog
3 Credit Hours. Chemistry of milk, meat, fruits, vegetables, cereals, legumes, spices, and other food ingredients. Different procedures to analyze food components.
Teaching Method: On Campus

Text Book	
Title	Fennema's Food Chemistry
Author(s)	Srinivasan Damodaran, Kirk L. Parkin and Owen R. Fennema
Edition	4th Edition
Short Name	Ref. 1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref. 2	Fennema's Food Chemistry	Srinivasan Damodaran, Kirk L. Parkin	5th Edition	
Ref. 3	Food Analysis	S. Suzanne Nieleson	4th Edition	
Ref. 4	Food Chemistry ? A Laboratory Manual,	Dennis D. Miller	1st Edition	
Ref. 5	Principles of Food Chemistry	J.M. deMan, Van Nostrand Reinhold,	2nd Edition	

Instructor	
Name	**Miss Neveen Hussein**

Office Location	-
Office Hours	Sun : 11:30 - 14:30 Mon : 08:30 - 11:30 Tue : 11:30 - 13:00 Tue : 13:00 - 14:30 Wed : 08:30 - 11:30 Wed : 13:00 - 14:30
Email	nmhussein@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 11:30 - 13:00 Room: M5127

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
912330	CHEM233 Analytical Chemistry	Prerequisite / Pass
632750	NF275 Principles Of Food Science	Prerequisite / Pass

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2, 3	Introduction; (1) Water - Properties of water. - Free and bound water, water activity and freezing of water in foods. - Low and intermediate moisture foods. - Chemical and physiochemical aspects of foods solutions. - Theories and applications of different moisture determination methods.	From **Ref. 1**, From **Ref. 2**, From **Ref. 3**, From **Ref. 4**, From **Ref. 5**
Weeks 4, 5, 6, 7, 8	2) Proteins - Classification and distribution in foods. - Review structure and function. - Reactions of proteins during processing. - Water binding, browning phenomena in protein foods. - Major food proteins, unconventional food proteins. - Functional properties of proteins. - Theories and applications of different protein determination methods.	From **Ref. 1**, From **Ref. 2**, From **Ref. 3**, From **Ref. 4**, From **Ref. 5**

Weeks 9, 10, 11	(3) Carbohydrates - Review structure and reactions. - Chemistry of mono- and oligo saccharides found in foods. - Polysaccharides (starch, cellulose, pectin and gums) and their role in foods. - Enzymes acting on carbohydrates, sweetness of sugars. - Analytical methods for carbohydrate determination.	From **Ref. 1**, From **Ref. 2**, From **Ref. 3**, From **Ref. 4**, From **Ref. 5**
Weeks 12, 13, 14	(4) Lipids - Classification and distribution in foods. - Composition of fats and oils. - Deteriorative reactions of fats and oils (autoxidation, lipolysis, reversion). - Chemistry and technology of processing fats and oils. - Physical properties of fats and oils. - Effects of processing on functional properties and nutritive value. - Analytical methods for determining different physical and chemical characteristics of fat.	From **Ref. 1**, From **Ref. 2**, From **Ref. 3**, From **Ref. 4**, From **Ref. 5**
Week 15	(5) Minerals - Ash determination methods. - Principles and applications for elemental analyses.	From **Ref. 1**, From **Ref. 2**, From **Ref. 3**, From **Ref. 4**, From **Ref. 5**
Week 16	(6) Vitamins - Determination methods. - Principles and applications.	From **Ref. 1**, From **Ref. 2**, From **Ref. 3**, From **Ref. 4**, From **Ref. 5**

Mapping of Course Outcomes to Program Outcomes	**Course Outcome Weight (Out of 100%)**	**Assessment method**
1. Develop and understanding of how individual food components contributes to the overall quality of foods. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	25%	
2. Achieve an understanding of the chemical changes that take place with food components during processing and storage. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	25%	
3. Recognize reactions and mechanisms important in food chemistry. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	20%	

4. Be capable of designing and conducting experiments and interpreting data to understand important food chemistry principles through food analysis part. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	30%	

Relationship to Program Student Outcomes (Out of 100%)				
SLO1	SLO2	SLO3	SLO4	SLO5
20	20	20	20	20

Evaluation	
Assessment Tool	**Weight**
Final exam	50%
First Exam	25%
Second Exam	25%

Policy	
Attendance	Consistent with Jordan University of Science and Technology guidelines, students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take them at an alternate time. No make-up exams will be given for unexcused absences.
Withdraw	Withdraw Consistent with Jordan University of Science and Technology guidelines

Date Printed: 2024-03-14