Jordan University of Science and Technology

Faculty of Agriculture

Nutrition & Food Technology Department

NF758 Advanced Food Chemistry

First Semester 2019-2020

Course Catalog
3 Credit Hours. A study of the chemistry of the major components comprising food and food products such as phytochemical, lipids, vitamins, proteins, minerals, carbohydrates and water. The effect and relationship of these food component interactions on stability is studied in terms of enzymatic and non-enzymatic degradation during handing, processing and preservation. Fundamental of chemistry in functionality and properties of food products for major and minor food constituents including antioxidants will be covered. Students will have a comprehensive vision to evaluate the interaction of physio-chemical properties on functional food for their constituents that may affect on food technology and processing of basic and developed biochemical, chemical and instrumental industry in harmony with up-to-date trends in food technology and international governing agencies.

Text Book	
Title	Food Chemistry
Author(s)	O.R. Fennema, Ed.
Edition	5th Edition
Short Name	O.R. Fennema
Other Information	Marcel and Dekker, Inc., New York, NY. 1996

Instructor	
Name	**Prof. Muhammad Alu"Datt**
Office Location	C
Office Hours	Sun : 09:15 - 10:15 Sun : 11:45 - 13:15 Mon : 09:15 - 11:15 Mon : 12:45 - 13:30 Tue : 09:15 - 10:15 Tue : 11:45 - 13:30 Wed : 09:15 - 11:15 Wed : 12:45 - 13:30
Email	malodat@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue, Thu : 14:30 - 15:30 Room: C5025

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction	From **O.R. Fennema**
Weeks 2, 3	Chemistry of Water	From **O.R. Fennema**
Weeks 4, 5, 6	Chemistry of Protein	From **O.R. Fennema**
Weeks 7, 8	Chemistry of Carbohydrate	From **O.R. Fennema**
Weeks 9, 10	Chemistry of Lipid	From **O.R. Fennema**
Week 11	Chemistry of Enzymes	From **O.R. Fennema**
Week 12	Chemistry of Phenolic Compounds	From **O.R. Fennema**
Week 13	Chemistry of Vitamins	From **O.R. Fennema**
Week 14	Chemistry of Coloring Agents	From **O.R. Fennema**
Week 15	Chemistry of Flavor	From **O.R. Fennema**
Week 16	Revision	From **O.R. Fennema**

Mapping of Course Outcomes to Program Student Outcomes	**Course Outcome Weight (Out of 100%)**	**Assessment method**
Identify the basic and compositional structures of main food molecules (proteins, lipids, carbohydrates, etc). Distinguish chemical bonding states (ionic, covalent, hydrogen, hydrophobic, etc.) of importance in food chemistry. List the functional properties of specific food molecules and ingredients and describe them to the appropriate functional groups. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	20%	
2. Develop and understanding of how individual food components contributes to the overall quality of foods. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	10%	
3. Achieve an understanding of the chemical changes that take place with food components during handling, processing and storage. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	15%	
4. Recognize reactions and mechanisms important in food chemistry. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	15%	
5. Be capable of designing and conducting experiments and interpreting data to understand important food chemistry principles. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	20%	

6. Develop and understanding of how individual food components contributes to the overall quality of foods. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	10%	
7. Achieve an understanding of the chemical changes that take place with food components during processing and storage. [1SLO1, 1SLO2, 1SLO3, 1SLO4, 1SLO5]	10%	

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

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