

ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD
(Department of Home & Health Sciences)

Course: Food Theory & Its Application (7762)
Level: MS Community Health & Nutrition

Semester: Spring, 2014
Credit: 3 (2 + 1)

CONTENT LIST

Following items are included in the study pack.

1. Course Book (Unit 1-9)
2. Theory Assignments One
3. Practical Assignment (Field Visit) One
4. Assignment's Forms Six
5. Schedule for submitting the assignments & tutorial meeting.

Note: If any one of the above items is missing from your study packet, kindly contact:

The Mailing Officer
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WARNING

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

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Level: MS Community Health & Nutrition
Total Marks: 100

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Pass Marks: 50

ASSIGNMENT No. 1
(Units 1–7)

- Q.1 Write short notes on the following: (16)
- a. Gelatinization and factors affecting this process
 - b. HACCP System in Food
- Q.2 What do you mean by properties of matter? Explain the role of acid, bases and buffers in food. (14)
- Q.3 Discuss cereal grains wheat & rice with special reference to their uses in food. (14)
- Q.4 What do you know about the abnormalities in structure and composition of egg? Also discuss the use of egg in foam formation. (14)
- Q.5 Define browning & sugar substitutes. Discuss different type of sweeteners used in food industry. (14)
- Q.6 Write down bread making process using yeast & other important ingredients. (14)
- Q.7 Differentiate between sensory & objective evaluation of food. Discuss different types of sensory testing procedures in detail. (14)

ASSIGNMENT No. 2 **(Visit to any local industry)**

Total Marks: 100

Pass Marks: 50

A workshop is compulsory for all the students. Marks obtained during the workshop will be included in your final result. This assignment is practical in nature and all the students will visit a local food industry under supervision of resource person to carry out the following activity.

Visit a local industry of your area and prepare a report (20-25 pages) covering industrial food processing steps starting from receipt of raw material till production of end product. Focus on the food preservation techniques, HACCP system operations and others relevant features of the industry in the context of theory course studied.

Course Outline

Unit 1: Basic Principles in Food Science

- Properties of Matter
- Energy and its Forms
- Bonding Forces (Ionic Bonds, Covalent Bonds)
- Acids, Bases, Buffers and pH
- Types of Solutions

Unit 2: Grains and Starches

- Structure and Composition of Cereal Grains
- Common Cereal Grains and their Uses
- Structure and composition of Starches, Pectin and Gums
- Factors Requiring Control in Gelatinization
- Gelation or Setting of Gelatinized Starch Pastes
- Starch Uses in Food Systems

Unit 3: Eggs and Egg Products

- Physical Structure and Composition of Eggs
- Inspections and Grading for Egg Quality
- Processing/Preservation of Eggs
- Denaturation and coagulation
- Effect of Added ingredients on Coagulation
- Nutritive Value of Eggs
- Safety of Eggs

Unit 4: Sugars, Sweeteners and Confections

- Sources of Sugar
- Types of Sugars and Sugar Syrups
- Properties of Sucrose

- Sugar Substitutes
- Confections
- Nutritive Value of Sugars and Sweeteners

Unit 5: Baked Products: Batters and Dough

- Classes of Batters and Dough
- Function of Various Ingredients in Batters and Dough
- The Leavening Process of Baked products
- Storage of Baked Products

Unit 6: Evaluation of Food Quality

- Aspects of Food Quality
- Taste Sensitivity
- Sensory Evaluation
- Objective Evaluation
- Comparison of Subjective and Objective Evaluation

Unit 7: Food Safety

- Biological hazards
- Chemical Hazards to the Food Supply
- Physical Hazards to the Food Supply
- Food Protection Systems
- The HACCP System of Food Protection

Unit 8: Food Preservation and Processing

- Heat Preservation
- Refrigeration Freezing, Dehydration & Concentration
- Added Preservatives
- Radiation

Unit 9: Packaging & Labelling of Food Products

- Types of Packaging Containers
- Packaging Materials
- Packaging of the Future
- Packaging as a Communication and Marketing Tool
- The Food and Drug Administration
- Food Labelling

Recommended Books:

1. Vickie A. Vaclavik & Elizabeth W. Christian (2008) Essentials of Food Science. 3rd Edition.
2. Devendra Kumar Bhatt and Priyanka Tomar (2006) an Introduction to Food Science and Technology & Quality Management.
3. Food Sciences and its Application Course Code-867, AIOU Compiled Material.