



Course Code FDSC-260	Course Title Food Science & Management Principles &lab	ECTS Credits 6
Department Life and Health Sciences	Semester Spring	Prerequisites FDSC-250
Type of Course Required	Field Food Science, Nutrition	Language of Instruction English
Level of Course 1 st cycle	Year of Study 2 nd	Lecturer Kyros Demetriades
Mode of Delivery face-to-face	Work Placement N/A	Co-requisites None

Objectives of the Course:

This course introduces the student to the main types of food that are important to the foods and nutrition professional. The course explores the basic principles of food chemistry in food preparation and includes topics in food preparation, preservation, regulatory agencies and food regulations, food servings as defined by the food guide pyramid and concepts related to food presentation, recipe alteration and menu design and foods responsible for providing necessary nutrients and phytonutrients to the diets. The format will be lectures 3h/week and 2h/w hands on laboratory exercises (including Basic Cookery Principles).

Learning Outcomes:

After completion of the course students are expected to be able to:

1. Understand the basic fundamentals of food chemistry and apply food science knowledge to the functions of ingredients in food.
2. Be able to describe why different preparation techniques are used for specific foods to increase palatability or nutritional value.
3. Be able to provide basic information on enhancing quality attributes or impacting nutritional quality and to identify recipe ingredients that need to be altered to help individuals conform to special diets
4. Use basic sensory evaluation techniques.
5. Be able to describe the role of government in food production, processing and labelling.

6. Be able to describe allowable claims and definitions of labelling terminology.
7. To enable students to obtain knowledge of different food groups and their contribution to nutrition.
8. To help them study the different methods of cooking and their advantages and disadvantages.
9. To enable them gain experience in the preparation of foods with attention to the preservation of their nutritive value - oriented to Indian cooking.
10. To help them understand the scientific principles governing the acceptability of food preparations.

Course Contents:

1. Introduction; Agencies and regulations
2. Sensory Evaluation; Temperature and specific heat.
3. Food Chemistry: water, solutions and frozen food
4. Food Chemistry: Fat/Oil Lipids
5. Food Chemistry: Proteins and vitamins
6. Contribution ingredients to finished products/Food additives
7. Fruits and Vegetables; Grains/cereals
8. Milk and dairy products; Eggs and emulsions
9. Meat
10. Poultry and Seafood
11. Flours and leavening agents, yeast breads
12. Specialty and functional foods; Nutraceuticals/Phytochemicals
13. Organic Foods; Genetically modified foods; Beverages

LABORATORY EXERCISES TOPICS:

1. Orientation-Safety/Heat Measurement and Recipe reading/writing
2. Cooking methods; water crystallization-frozen desserts
3. Food selection and sensory evaluation
4. Effects of different fats/oils in baked products
5. Sugar solutions, sugar crystallization and candy making
6. Egg cookery/effect of heat/Fat; Emulsions and foams, stabilizers
7. Milk denaturation/coagulation; Starch cookery and sauces
8. Leavening; Yeast Breads; Beverages
9. Meat and fish moist and dry heat cookery
10. Fruit and vegetable cookery; canning and freezing
11. Menu planning; Recipe adaptation/ development I (Effect of mixing and ingredient ratio on structure)
12. Menu planning; Recipe adaptation/ development II (Effect of mixing and ingredient ratio on quality)

Learning Activities and Teaching Methods:

Lectures; Discussions; Lab Exercises

Assessment Methods:

Lab Reports, Tests and Mid-term Exam; Final Exam
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Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Amy Christine Brown	Understanding Food: Principles and Preparation (Hardcover)	Brooks Cole 2 edition	2003	0534506097
Peter Barham	The Science of Cooking (Hardcover)	Springer; 1 edition	2001	3540674667
	Sensory Evaluation of Food: Principles and Practices (Food Science Texts Series) (Hardcover)	Springer; 1 edition	1999	083421752X

Recommended Textbooks/Reading:

1. **Dictionary of Food Ingredients, Fourth Edition (Hardcover)** by [Robert S. Igoe](#), [Y. H. Hui](#)**Publisher:** Springer; 4th edition (May 11, 2006) **ISBN:** 0834219522
2. **Foods: A Scientific Approach (3rd Edition) (Hardcover)** by [Helen Charley](#), [Connie M. Weaver](#)**Publisher:** Prentice Hall; 3 edition (August 11, 1997) **ISBN:** 0023219513
3. **Quality Food Purchasing, Kotschevar and Donnelly, 5th Ed. Merrill, Prentice Hall, 1999**
4. **Principles of Food Sanitation (Food Science Texts Series) (Hardcover)** by [Norman G. Marriott](#), [Robert B. Gravani](#) **Publisher:** Springer; 5 edition (January 5, 2006) **ISBN:** 0387250255
5. **Principles and Practice for the Safe Processing of Foods (Paperback)** by [David Shapton](#) **Publisher:** CRC; New Ed edition (July 27, 1998) **ISBN:** 1855733625
6. **Bakery Products: Science And Technology [ILLUSTRATED] (Hardcover)** by [Harold Corke](#), [Nanna Cross](#), [Wai-Kit Nip](#), [Y. H. Hui](#) (Editor) **Publisher:** Blackwell Publishing Professional (June 1, 2006) **ISBN:** 0813801877
7. **Food Preparation Study Course: Quantity Preparation and Scientific Principles (Plastic Comb)** by [Shirley A., Ph.D. Gilmore](#), [Lynne E. Baltzer](#), [Iowa Dietetic Association](#) (Corporate Author) **Publisher:** Iowa State Press; 4th Spiral edition (August 30, 2002) **ISBN:** 0813827116
8. **Nutrition Labeling Handbook (Food Science and Technology)(Hardcover)** by [Shapiro](#) **Publisher:** CRC (August 30, 1995) **ISBN:** 0824792858
9. **Introductory Foods, 12th Edition (Hardcover)** by [Marion Bennion](#), [Barbara Scheule](#) **Publisher:** Prentice Hall; 12 edition (July 17, 2003) **ISBN:** 0131100017

10. **Foundations of Food Preparation (6th Edition) (Hardcover)** by [Jeanne Freeland-Graves](#), [Gladys C. Peckham](#) **Publisher:** Prentice Hall; 6 edition (November 14, 1995) **ISBN:** 0023396415
11. **Food Science (Food Science Texts Series) (Hardcover)** by [Norman N. Potter](#), [Joseph H. Hotchkiss](#) **Publisher:** Springer; 5 edition (July 1, 1999) **ISBN:** 083421265X