

REVISED ON AUGUST 22, 2006

**UNIVERSITY OF ARKANSAS
DEPARTMENT OF FOOD SCIENCE
FOOD CHEMISTRY, FDSC 4304, FALL SEMESTER, 2006
Tues. & Thurs. 2:00-3:20 PM
Instructor: Dr. N. Hettiarachchy**

LECTURE SCHEDULE

MONTH	DATE	TITLE
August	22	Introduction, History of Food Chemistry
		Approach to studying Food Chem., Societal role of Food Chemistry (PAP-p1-4)
	24	Water Molecule: Physical constant of water and ice, water activity, isotherm, shelf-life (PAP-p 5-24)
	29	Food Carbohydrates: Utilization, classification (PAP-p25-51)
	31	Food Carbohydrates: Structure, reactions, functions
September	05,07,12	Food Lipids: Structure, reactions, chemistry of lipids and oil processing, role of lipids in flavor, biological aspects (PAP-p52-71)
	14	Student Quiz, and First Exam
	19,21,26 28	Food Proteins: Structure, reactions, denaturation, isolation, functional properties, nutritional aspects, unconventional protein sources, modifications (PAP-p72-114)
October	03,05,10	Food Enzyme: Nomenclature, specificity, factors influencing enzyme activity, controlling enzyme action, immobilized enzymes, modification of food by enzymes. Enzyme inhibitors (PAP-p115-137) Special Problem Team Work
	12,17	Vitamins & Minerals: Water and fat soluble vitamins, structure, stability of vitamins during processing, chemical properties of minerals and their bioavailability, optimizing nutrient retention (PAP-p138-157)
	19	Second Exam, Quiz

MONTH	DATE	TITLE
October	24,26	Pigments and Other Colorants: Pigments and food colorant added to foods. Possible new food colorants (PAP-p158-190)
Oct/Nov.	31,02	Flavors: Vegetable, fruit and spice flavors. Flavors generated through fermentation. Flavors from fats and oils. "Process" and "Reaction" flavors (PAP-p191-206)
	07	Quiz, Third Exam
	09,14	Food Additives: Sequestrants, emulsifiers, antioxidants, antimicrobial agents, non-nutritive and low calorie sweeteners. Independent work. (PAP-p207-260)
	16,21,28	Characteristics of Muscle Tissue: Structural differences in various meat products, proteins of muscle cell, connective tissue, collagen, biochemical changes in post-mortem, effect of post-mortem changes in quality attributes of meat. Poultry product Highlight (PAP-p275-302)
	23-24	Thanksgiving Holiday
	30	Nutrient Interaction: As it relates to bread baking as an example (PAP-p303-310)
December	05	An Integrated Approach to Food Chemistry: Shelf-life test design. Nutraceuticals (PAP-p311-316)
	07	Dead Day

PAP-p refers to Professors Assistance Program and page numbers. In addition to the materials in the PAP, supplemental materials will be assigned from Food Chemistry, Fennema text book. Also, handouts will be provided for topics to cover the latest information related to each topic where ever needed.

EXAM DATES:

First Exam: September 14

Second Exam: October 19 (mid term will be 1st, 2nd exams)

Third Exam: November 07

FINAL EXAM:

December 8, 9:00 -11:00 AM