

Course Syllabus

1. Name of Curriculum

Bachelor of Science (Food Science & Technology), Mahidol University International College

2. Course Code: ICFS 325

Course Title: Dairy Products Technology

3. Number of Credits: 4 (Lecture/Lab) (4-0)

4. Prerequisite(s): ICFS 313, ICFS 316, ICFS 431

5. Type of Course: Elective

6. Trimester / Academic Year: Second trimester / 2003-04

7. Course Description

Processing and technologies of fluid milk plant operation from milk receiving to various finished products. Fluid milk, yogurt, cheese, and frozen dairy desserts; physical, microbiological, and chemical properties of fluid milk and milk components; milk quality supply; good manufacturing practices (GMPs); HACCP, and basic concepts of quality assurance and quality control.

8. Course Objectives

1. Gain an understanding of dairy processing unit operations and production of dairy products.
2. To integrate concepts in chemistry, biochemistry, physics, engineering, mathematics with dairy processing operations and understand their role in processing of dairy products.
3. To gain the ability to think critically about problems and issues in food processing.
4. To gain an appreciation for how the food processing industry's role in society.

9. Course Outline

Week	Topics			Instructor	
	Lecture/Seminar	Hours	Lab		Hour
1	Introduction; Milk History, Composition, Production and Consumption, and Trends	4			Dr. Kohnhorst
2	Milk Production and Biosynthesis Dairy Chemistry and Physics; Dairy Microbiology	4			Dr. Kohnhorst
3, 4, 5	Dairy Processing Unit Operations: Clarification, Separation, 1. Standardization 2. Pasteurization 3. UHT treatment 4. Homogenization 5. Membrane Processing 6. Evaporation and Dehydration 7. Utilities-Steam and Refrigeration	10			Dr. Kohnhorst
5	Midterm	2			
6,7,8	Dairy Products Production: 1. Overview and Fluid Milk Products 2. Concentrated and Dried Milk Products 3. Cultured Dairy Products: Cheese, yogurt, fermented beverages 4. Whipped Cream 5. Ice Cream 6. Butter 7. Whey Products	12			Dr. Kohnhorst
9,10,11	Hygiene in Manufacturing Milk Products: 1. Microorganisms of concern 2. HACCP 3. Pasteurization 4. Cleaning of Dairy Equipment 5. Dairy Processing Plant Sanitation	12			Dr. Kohnhorst
	Total	44			

10. Teaching Methods

1. Lecture
2. Movies
3. Field Trips

11. Teaching Media

1. Textbook
2. Powerpoint presentations
3. Handouts on relevant topics

12. Course Achievement

Assessment made from the stated criteria- students who receive more than 90% of the total points will receive a grade A.

13. Course Evaluation

Component	%
Attendance	10
Quizzes/ Class participation	15
Midterm exam	35
Final exam	40
Total	100

14. References

1. Bylund, G. 1995. Tetra-Pak Dairy Processing Handbook. Tetra-Pak Processing Systems, Lund, Sweden
2. Early, R. 1998. The Technology of Dairy Products. Blackie Academic & Professional, London.
3. Dairy Science and Technology. <http://www.foodsci.uoguelph.ca/dairyedu/home.html>
an educational site focused on milk, dairy products, and dairy technology from the University of Guelph in Canada.

15. Instructor

Dr. Andrew Kohnhorst

16. Course Coordinator

Dr. Andrew Kohnhorst