

Course Syllabus

1. Name of Curriculum

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

2. Course Code: ICFS 424

Course Title: Fats and Oil Technology

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

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

5. Type of Course: Elective

6. Trimester / Academic Year: Third Trimester / 2003-04

7. Course Description

Processing and technologies of edible fats and oils; physical and chemical properties of both raw materials and finished products; GMPs, ISO 9002, HACCP, basic concepts of quality assurance and quality control applicable to fats and oil technology.

8. Course Objectives

After studying the course the student will be able to:

- (i) Describe the nature and chemistry of lipids.
- (ii) Describe the sources, extraction and processing of vegetable lipids.
- (iii) Describe the physicochemical properties of lipids and their role in dispersed food systems.
- (iv) Describe the mechanisms of lipid oxidation and chemical antioxidant action.
- (v) Describe laboratory techniques used to evaluate lipid quality.
- (vi) Describe the effect of lipids on health.

9. Course Outline

| Week | | | | Instructor | |
|------|---|------|-----|------------|------------|
| | Lecture/Seminar | Lect | Lab | | Total |
| 1 | Lipid classification | 4 | | 4 | Mike Johns |
| 2 | Lipid classification | 4 | | 4 | Mike Johns |
| 3 | Source, composition and economics of oil extraction | 4 | | 4 | Mike Johns |
| 4 | Processing technology | 4 | | 4 | Mike Johns |
| 5 | Mechanisms of lipid oxidation | 4 | | 4 | Mike Johns |
| 6 | Lipid crystallization and emulsification | 4 | | 4 | Mike Johns |
| 7 | Mid term | | | | Mike Johns |
| 8 | Antioxidant chemistry | 4 | | 4 | Mike Johns |
| 9 | Lipids and health | 4 | | 4 | Mike Johns |
| 10 | Attributes of food lipids | 4 | | 4 | Mike Johns |
| 11 | Reactions of triglycerides | 4 | | 4 | Mike Johns |
| 12 | Final | | | | Mike Johns |
| | Total | 40 | | 40 | |

10. Teaching Methods

1. Lecture
2. Self-study
3. Practical exercises

11. Teaching Media

1. PowerPoint presentations
2. Texts and teaching materials

12. Course Achievement

Assessment made from the set forward criteria: -

| Grade | % |
|-------|--------|
| A | 90-100 |
| B+ | 85-89 |
| B | 80-84 |
| C+ | 75-79 |
| C | 70-74 |
| D+ | 65-69 |
| D | 60-64 |
| F | 0-59 |

13. Course Evaluation

| Component | % |
|--------------------------------|-----|
| Attendance/Class participation | 10 |
| Quizzes | 15 |
| Assignments | 15 |
| Midterm | 30 |
| Final | 30 |
| Total | 100 |

14. References

1. Food Chemistry: Principles and Applications. Published by Science Technology System 2000. Edited by Genevieve L. Christen and J Scott Smith. ISBN No. 1-891796-01-1
2. Food Science (5th edition). 1998. N. H. Potter, J. H. Hotchkiss. Aspen Publishers Inc. Gaithersburg, Maryland.

15. Instructor

Instructor: Mr. Mike Johns, Room 1409 International College Building

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16. Course Coordinator

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