



**ANDHRA PRADESH STATE COUNCIL OF HIGHER
EDUCATION**

**Model Syllabus for 4-Year UG Honours in B.Sc. (Food Science and
Technology) as Major in consonance with Curriculum framework w.e.f.
(W.E.F. AY-2026-27)**

COURSE STRUCTURE

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
II	III	5	Technology of Fats and Oils	3	3
			Technology of Fats and Oils-Practical	2	1
		6	Dairy Technology	3	3
			Dairy Technology-Practical	2	1
		7	Confectionery Technology	3	3
			Confectionery Technology-Practical	2	1

SEMESTER - III

COURSE 5: TECHNOLOGY OF FATS AND OILS

Theory

Credits: 3

3 hrs/week

Learning Objectives

To study the composition, chemistry and processing aspects of oils and fats

Learning Outcomes

Upon successful completion of the course, a student will be able to: LO1: To study about the composition & classification of fats.

LO2: To study about the nutritional aspects & characteristics of fats. LO3: To know about the processing aspects of fats.

LO4: To gain knowledge about the various value added products from facts of technologies to improve.

LO5: To understand the utilization of byproducts from oil & fat industry.

Unit – I

Composition & Classification of Fats

Fat - Definition, Importance, Chemical composition of fats, Triglycerides – their structure and composition, Mono glycerides and diglycerides, Free fatty acids – phosphatides, Sterols – fatty alcohols, Tocopherols

UNIT-II

Characteristics of fat

Nutritional aspects of fats and oils, Metabolism – fat level in the diet and effect on health, Non- allergenicity of edible oils, Fat reduction in foods, Factors affecting physical characteristics of fats and oils, Chemical reactions of fats and fatty acids, Important characteristics of oils from coconut, cotton seeds, Palm, Sunflower, sesame, safflower, rice bran, rape seed, Mustard, Linseed, soybean, castor and lard

Unit – III Processing of fats

Processing methods of oils – Degumming, refining, bleaching, Deodorizing, fractionation, Hydrogenation, inter esterification & esterification, Common products preparation – Salad and cooking oils, shortenings (baking and frying fats), Hard butters, margarine and spreads, Dressings for food -(Mayonnaise and Salad dressings), Pourable – type dressings, reduced calorie dressing, Toppings, coffee whiteners, confectionaries coatings, Low Fat spreads for traditional breakfast foods

Unit – IV

Value Added Products from fats

Growing demands on oils & lipids from traditional and convenience food markets in terms of quality,

Functional, sensory and nutritional strengths, Technologies to improve the edible oil pool in India,

Stability of oils and fats, Value added products from vegetable oil refining industry: lecithin, wax, Value added products from vegetable oil refining industry: Vitamin-E, oryzanol, Alternative methods for extraction & processing of oils

UNIT-V

By Product Utilization

Value added products from non-traditional oils and fats, By-products from bran oil and oil refining industry, Utilization of lingo cellulosic waste from oil industry, Bakery fats with zero trans fatty acids, Refining procedures for edible oils with a note on analytical techniques in lipids **REFERENCES**

- 1) D.Swern, “Bailey’s industrial oils and fat products” Wiley Science Publications, New york
- B.B. Min & C.C Akoh, “Food lipids” Marcel & Decker Publishers, 1998.
- B.B. Min, R.E. McDonald, “Food Lipids and Health”, Marcel & Decker Publishers, 1996.

SEMESTER - III

COURSE 5: TECHNOLOGY OF FATS AND OILS

Practical

Credits: 1

2 hrs/week

- Common Test methods for Fats
 - 1) Cold Test
 - 2) Colour, (Lovibond)
 - 3) Dropping point
 - 4) Flavour
 - 5) FFA
 - 6) Melting Point
 - 7) Oil stability index
 - 8) Peroxide Value
 - 9) solid fat index
 - 10) Solid fat content
 - 11) Total lipids and thiobarbituric acid reactive substances (TBARS)
 - 12) Karl-Fischer titration- application
- B) Oil Seeds
 1. Experimental expeller processing
 2. Experimental solvent extraction
 3. Production of protein concentrates and isolates.
 4. Lab model hydrogenator (for hydrogenation of vegetable oils).
 5. Visit to oil mills

4- Year UG Honours, Major
Syllabus
(2026-27)
Semester-III

Model Question Paper

Time : 3hrs

Marks:75

Part-A

Answer any Five Questions. Each Question carries 3 Marks.

5x3=15

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Answer the following questions. Each question carries 12 Marks

5x12=60

11. a) Unit-I
(Or)
b) Unit-I

12. a) Unit-II
(Or)
b) Unit-II

13. a) Unit-III
(Or)
b) Unit-III

14. a) Unit-IV
(Or)
b) Unit-IV

15. a) Unit-V
(Or)
b) Unit-V