



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	IV	8	Baking Science and Technology	3	3
			Baking Science and Technology-Practical	2	1
		9	Technology of Fruits and Vegetables	3	3
			Technology of Fruits and Vegetables-Practical	2	1
		10	Technology of Cereals, Pulses and oil seeds	3	3
			Technology of Cereals, Pulses and oil seeds-Practical	2	1

SEMESTER - IV

COURSE 10: TECHNOLOGY OF CEREALS, PULSES AND OIL SEEDS

Theory

Credits: 3

3 hrs/week

Learning Objectives

To understand the concepts of processing, value addition of pulses, cereals and oil seeds.

Learning Outcomes

Upon successful completion of the course, a student will be able to:

LO 1 Student will have basic knowledge of Cereals Pulses and oil seeds

LO 2 Student will learn how to Mill cereals pulses and oil seeds at home scale, and large scale

LO 3 Student will learn about changes occurring during processing of Cereals Pulses and oil seeds

LO 4 Student will learn about various processing Technologies

LO 5 Student will learn how to prepare value added products from Cereals Pulses and oil waste

Unit 1

Present status and future prospects of legumes and oilseeds; Morphology of legumes and oilseeds; Classification and types of legumes and oilseeds Chemical composition, nutritional value and anti-nutritional compounds in legumes and oilseeds; Methods of removal of anti-nutritional compounds

Unit 2

Pulse milling: Home scale, cottage scale and modern milling methods, machines, milling quality, milling efficiency Factors affecting milling quality and quantity; Problems in dhal milling industry. Oil seed milling: Ghanis, hydraulic presses, expellers, solvent extraction methods, machines, Milling quality, milling efficiency, factors affecting milling quality and quantity; Problems in oil milling industry;

Unit 3

Nutritional changes during soaking and sprouting of pulses; Cooking quality of dhal, methods, factors affecting cooking of dhal; Quick cooking dhal, instant dhal; Soybean milk processing and value addition; Fermented products of legumes.

Unit 4

Desolventization Refining of oils: Degumming, neutralization, bleaching, filtration, deodorization, winterization and their principles and process controls; Hydrogenation of oils; New technologies in oilseed processing.

Unit 5

Utilization of oil seed meals for different food uses: High protein products like protein concentrates and isolates; By-products of pulse and oil milling and their value addition.

Reference

Guriqbal Singh, Harbhajan Singh Sekhon, Jaspinder Singh Kolar and Masood Ali. 2005. Pulses. Agrotech Publishing Academy, Udaipur.

A. Chakraverty. 2008. Post Harvest Technology of Cereals, Pulses and Oilseeds, 3rd Ed. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

Frank D. Gunstone. 2008. Oils and Fats in the Food Industry. John Wiley and Sons, Ltd., West Sussex, UK.

Fereidoon Shahidi. 2005. Bailey's Industrial Oil & Fat Products, 6th Ed., Vols. 1 to 6. John Wiley and Sons, Inc. Hoboken, New Jersey, USA.

Amalendu Chakraverty, Arun S. Mujumdar, G.S. Vijaya Raghavan and Hosahalli S. Ramaswamy. 2003. Handbook of Post Harvest Technology: Cereals, Fruits, Vegetables, Tea, and Spices. Marcel Dekker, Inc., NY, USA.

K.M. Sahay and K.K. Singh. 2001. Unit Operations of Agricultural Processing, 2nd Ed. Vikas Publishing House Pvt. Ltd., Noida.

SEMESTER - IV

COURSE 10: TECHNOLOGY OF CEREALS, PULSES AND OIL SEEDS

Practical	Credits: 1	2 hrs/week
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1. Chemical analysis of select spices: Moisture, valuable oil,
- 2 Physical analysis of select spices: specific gravity, refractive index, acid value
- 3 Identification and characterization of flavouring compounds of spices
- 4 Valuable oil determination
- 5 Extraction of oil from clove/ pepper
- 6 Extraction of oil from cardamom/ chilli
- 7 Extraction of oleoresins: Turmeric/ ginger, pepper, clove
- 8 Extraction of oleoresins: pepper/ clove
- 9 Peperine estimation in pepper oleoresin
- 10 Steam distillation of spices
- 11 Determination of curcumin content in turmeric
- 12 Study of standard specification of spices
- 13 Packaging study of spices
- 14 Preparation of curry powder
- 15 Extraction of active ingredients by TLC, HPLC and GC

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

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