DISCIPLINE SPECIFIC CORE COURSE
DSC FT09: Cereals, Pulses & Oilseed Processing Technology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

Course title & code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Theory	Tutorial	Practical/Practice		
Cereals, Pulses & Oilseed Processing Technology	4	3	0	1	XII Pass	DSC FT01, DSC FT02, DSC FT03, DSC FT04, DSC FT05, DSC FT06

Learning Objectives

1. To impart knowledge of different methods of Cereal, Pulse & Oilseed processing.
2. To learn about processing of various products & by-products.

Learning Outcomes

After completing this course, students will be able to:

1. Understand the concept of quality (composition & types) of Cereals, Pulses & oilseeds for developing good quality end products.
2. Comprehend the processing and preservation of Cereals, Pulses & Oilseeds using various techniques.
3. Comprehend the processing of by-products.

SYLLABUS OF DSC FT09

THEORY
(Credits 3; Hours 45)

UNIT I: Introduction of Cereals

Subtopics:

Cereal Processing Technology

Introduction & chemical composition of cereals

- Wheat—Types, milling, flour grade, flour treatments (bleaching, maturing), flour for various purposes
- Rice: Types, Physicochemical properties, milling (mechanical & solvent extraction), parboiling, ageing of rice, utilization of by- products
- Corn: Milling (wet & dry), cornflakes, corn flakes, corn flour
- Barley: Milling (pearl barley, barley flakes
- Oats: Milling (oatmeal, oatflour & oatflakes), By-products of oat processing
- Rye & Triticate: Milling (flour), uses

UNIT II: : Processing of Coarse Grains
Subtopics:

- Sorghum and Millets (Traditional & commercial milling)

UNIT III: Pulse Processing Technology
Subtopics:

- Introduction to pulses
- Milling of pulses
- Dry milling
- Wet milling
- Improved milling method

UNIT IV: Oilseed Processing Technology

Unit Description: The unit will provide an knowledge of the different fish products processing and preservation techniques.
Subtopics:

- Introduction
- Extraction of oil (Mechanical & Solvent Extraction Milling)
- Refining of oil
- Sources of protein (defatted flour, protein concentrates and isolates, properties and uses)
- Protein texturization, fibre spinning

PRACTICAL
1 Credits (30 Hrs)

- Physical characteristics of Wheat.
- Estimation of Gluten Content of flour.
- Estimation of Pelenske Value of flour.
- Fermenting power of yeast.
- Physical Characteristics of Rice and paddy.
- Cooking characteristics of rice.
- Determination of sedimentation power of flour
- Preparation of Dairy Analogue (Soymilk from Soybeans)

Essential readings:

1. Kent, N.L. 2003. Technology of Cereal, 5th Ed. Pergamon Press.
2. Chakraverty. 1988. Post Harvest Technology of Cereals, Pulses and Oilseeds, revised Ed., Oxford & IBH Publishing Co. Pvt Ltd.

Recommended readings:

1. Marshall, Rice Science and Technology. 1994. Wadsworth Ed., Marcel Dekker, New York.
2. Manay, S. and Sharaswamy, M. 1987. Food Facts and Priniciples.Wiley Eastern Limited.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.