

FACULTY OF SCIENCES

SYLLABUS

FOR

INTERDISCIPLINARY COURSE IN FOOD SCIENCE & TECHNOLOGY (PG)

Examinations: 2019 - 20



GURU NANAK DEV UNIVERSITY AMRITSAR

- Note:**
- (i) Copy rights are reserved.
Nobody is allowed to print it in any form.
Defaulters will be prosecuted.

 - (ii) Subject to change in the syllabi at any time.
Please visit the University website time to time.

Interdisciplinary Courses
FOOD SCIENCE AND TECHNOLOGY (PG)

**FTL-051: Introduction to Food Processing
(Odd)**

Credits: 4-0-0

Mid Semester Examination: 20% weightage

End Semester Examination: 80% weightage

Instructions for the Paper Setters:

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Food: definition, groups of foods. Objectives of food processing.

Constituents of food: carbohydrates, proteins, fats, vitamins and minerals, pigments, enzymes.

Food processing operations: Cleaning, separating, heating, cooling, evaporating, drying, packaging.

SECTION-B

Food spoilage: Microorganisms, insects, parasites and rodents, natural food enzymes, temperature, moisture, oxygen, light and time.

Application of heat in processing: pasteurization, sterilization, blanching, conduction and convection heating, canning, aseptic processing.

SECTION-C

Applications of low temperature in food processing: refrigeration, freezing

Food dehydration and concentration: significance of moisture, water activity, factors affecting moisture removal from foods, types of driers, freeze drying, concentration of foods using evaporators.

SECTION-D

Fermented foods: pickles, yoghurt and wine.

Food packaging: importance, objectives and functions.

Recommended Book:

1. Food Science by Norman N. Potter.
2. Food Engineering Operations by JG Brennan, JR Butters, ND Cowell and AEV Lilly.

Interdisciplinary Courses
FOOD SCIENCE AND TECHNOLOGY (PG)

**FTL-052: Technology of Processed Foods
(Even)**

Credits: 4-0-0

Mid Semester Examination: 20% weightage

End Semester Examination: 80% weightage

Instructions for the Paper Setters:

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Production, composition and structure of wheat and rice, Milling of wheat and rice, Manufacture of cereal products: bread, cookies and biscuits, cakes, pasta and noodles, corn flakes and extruded snacks.

SECTION-B

Chemical composition and nutritive value of milk. Processing of milk and milk products: standardized pasteurized milk, flavoured milk, yoghurt, dahi, paneer and cheese, ice cream, milk powder.

SECTION-C

Egg: structure and composition, quality factors, storage and egg preservation. Poultry processing: slaughtering to packaging, comminuted meat products.

SECTION-D

Processing of fruits in juices, aseptic packaging, squash, jams and marmalades. Drying and canning of vegetables. Packaging of fresh fruits and vegetables.

Recommended Books:

1. Technology of Cereals by N. L. Kent.
2. Preservation of Fruits and Vegetables by Girdhari Lal, G. S. Siddappa, G. L. Tandon.
3. Meat Handbook by Albert Lovie.
4. Poultry Products Technology by G.J. Mountney.
5. Outlines of Dairy Technology by Sukumar De

Interdisciplinary Courses
FOOD SCIENCE AND TECHNOLOGY (PG)

FTL - 053: Food Quality and Food Safety
(Even)

Credits: 4-0-0

Mid Semester Examination: 20% weightage

End Semester Examination: 80% weightage

Instructions for the Paper Setters:

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Quality characteristics, Methods for determining quality
Principles and benefits of Quality control
Sequence of operations in quality control

SECTION-B

Food adulteration in India, Types of adulterants: Intentional and incidental, adverse effects of adulteration.
Methods for detecting food adulteration in various food products like Oils, spices, milk products,
pulses, cereal and vegetable products, tea, coffee, saffron.

SECTION-C

Measures and approaches for control of food adulteration.
Food Safety - Definition and importance, HACCP -Definition and principles.

SECTION-D

Good manufacturing practises (GMP) / Good Hygiene Practises (GHP)
Good Laboratory Practises (GLP)
Role of FSSAI in maintaining quality of processed food products in India.

Recommended Books:

1. Dev Raj, Rakesh Sharma, N L Patel. Handbook of Food Science and Technology Vol I: Chemistry and Safety - Stadium Press Pvt Ltd., New Delhi
2. Dev Raj, Rakesh Sharma, N L Patel. Handbook of Food Science and Technology Vol II: Processing Techniques.