FST-107

Department of Food Science and Technology
Chaudhary Devi Lal University, Sirsa
M.Sc. Food Science and Technology (Four Semester Programme)
Scheme and Syllabi w.e.f. Session 2016-17

Semester I

Type of course	Course code	Title of course	Teaching hours per week	Credits	Internal Assessment/ Evaluation	End term examination	Total	Duration of exam (Hrs. Theory/ Practical)
Core	FST- 101	Principles of Food Preservation	4	4	30	70	100	3
Core	FST- 102	Basic Food Microbiology	4	4	30	70	100	3
Core	FST-103	Basic Food Engineering	4	4	30	70	100	3
Core	FST- 104	(Laboratory- I) Food Microbiology	8	4	-	100	100	6
Core	FST- 105	(Laboratory-II) Food Analysis	6	3		75	75	6
Elective Discipline	FST-106	Food Chemistry	4	4	30	70	100	3
	FST-107	Food Analysis	4	4	30	70	100	3
Total				23			575	

Food Analysis
Paper code: FST 107

Credits: 4
Periods per week: 4 Hrs.

Max. Marks: 70
Duration of Exam.: 3Hrs

Note: There are **nine** questions in all. Question No. 1 is compulsory, it consists of 5 short questions of 2 marks each. Students have to attempt **five** questions in all, selecting one question from each unit.

UNIT I

Introduction to food analysis, types of samples and sampling techniques, storage and preservation of samples, expression of results.
Various analytical methods for food samples such as, pH value, turbidity, moisture content etc. Analysis of principal food constituents such as carbohydrates, proteins, fat, vitamins and minerals by various methods.

UNIT II

Instrumentation in food analysis: Principles, working and application of spectroscopy, UV, visible and fluorescence spectroscopy.
Electrophoresis: Principle, types of electrophoresis, basic and advanced instrumentation and their applications in food analysis.

UNIT III

Chromatography: Types of chromatography, principle, basic instrumentation and their applications in food analysis.
Basic instrumentation in textural analysis: texture analyzer, penetrometer.

UNIT IV

Methods for measuring rheological and viscoamylographic properties of foods - viscoamylograph, extensograph, arelographic instruments.
Sensory evaluation: Introduction, methods, panel screening, selection methods, Sensory and instrumental analysis in quality control, hedonic scale testing of flavor, aroma, taste, texture, and overall acceptability of food products.

Text and Reference Books:

1. Ronald S. Kirk, Ronald, Sawyer (1991). *Pearsons Composition & Analysis of foods*, 9th Edition Longman scientific & Technical , U.K.
2. Pomeranz , Y. & Mrloan (1978) , *Food Analysis : Theory and Practice , Westport*, connectiant :Amerine, M.A. Pangborn, R.M., and Rosseler, E.B. 1965. Principles of Sensory Evaluation of Food. Academic Press, New York.
3. Birk, G.G., Herman, J.G. and Parker, K.J. Ed. -1977. Sensory Properties of Foods. Applied Science, London.

Open Elective Course: For the Student of other department of the university

The Department of Food science and Technology offer the following open elective course for the Ph.D. students of other departments of the university.

Type of course	Course Code	Title of Course	Teaching Hours per week	Credits	Internal Assessment / Evaluation	End term Examination	Total	Duration of Exam. (Hrs.)
Open elective	OEC-FST-700	Basic concepts in Food Technology	2	2	20	30	50	3

Total Credits & Marks

Semester	Credits	Marks
Core and Elective Courses	12	300
Open Elective Course	2	50
Grand Total	**14**	**350**

General instructions:

1. Each student will submit one assignment and present one presentation to the concerned teacher of the subject.
2. The ordinance (Choice Based Credit System) of the university shall be followed by the department.

Open Elective Course

Basic concepts in Food Technology

Paper code: OEC-FST-~~605~~ 700

Credits: 2
Periods per week: 2 Hrs.

Max. Marks: 50 (Ext-30+Int-20)
Duration of Exam.: 3Hrs

Note: There are **nine** questions in all. Question No. 1 is compulsory, it consists of 5 short questions of 2 marks each. Students have to attempt **five** questions in all, selecting one question from each unit.

UNIT I

Importance & scope of Food Science
Nutraceuticals and functional foods: classification, sources, properties, functions, scope & future prospectus. Probiotics & probiotics.

UNIT II

Food Poisoning: Infection and intoxication
Phytochemicals and proactive compounds in fruits and vegetables-health benefits

UNIT III

Introduction and concept: Food Adulteration – Definition, concept, classification of adulterants. Food Contaminants, difference between adulterants and contaminants, foods commonly adulterated, harmful effects of adulterants, Household techniques for detection of adultration.

UNIT IV

Food packaging: types, factors affeting selection of a food package, functions.
Active food packaging, Aseptic packaging.

TEXT / REFERENCE BOOKS:

1. Mazza, G (1988). Functional foods--biochemical and processing aspects. Technomic Publ. Lancaster, USA.
2. Wildman, REC (2007) Handbook of nutraceuticals and functional foods.
3. Pomeranz , Y. & Mrloan (1978) . *Food Analysis : Theory and Practice . Westport.* connectiam :
4. Birk, G.G., Herman, J.G. and Parker, K.J. Ed. -1977. Sensory Properties of Foods. Applied Science. London.
5. Sacharow, S. and Griffin, R. C. (1980) *Principles of food packaging*. 2nd Ed., Avi,Publication Co.Westport, Connecticut, USA.
6. Rooney, M.L (1995) *Active Food Packaging*. Blackie Academic & Professional, Glasgow, UK.
7. Bakker, M. (1986) *The Wiley Encyclopaedia* of Packaging Technology, john Willey Sons.inc: New York.