

Department of Chemistry
Govt. V.Y.T. PG Autonomous
College Durg (C.G.)



Value added Course

2022-23

Govt. V. Y. T. PG Autonomous College, Durg
Department of Chemistry

Value added Course: *Chemistry of Food, Nutrition and Preservation*

Course Duration: 30hrs.

Course outcome:

Upon successful completion of the course, students are expected to be able:

CO1: To have knowledge about the basics of foodscience and its significance

CO2: To gain insight of nutrition and itsimportance

CO3: To learn about the food preservation and itsutility

CO4: To know about food contaminants, additives, food standards and food laws

CO5: To imbibe the practical skills of food preservation, food processing and quantitative estimation

Module- 1

Basics

(4 lectures/hrs.)

Basic of Food Science: Basic concept on Food, Nutrition and Nutrients - Nutrition, Malnutrition and Health: Scope of Nutrition; Classification of food; Food group and food pyramids; Classification of nutrients; Balanced Diet.

Module - 2

(8 lectures/hrs.)

Nutrition: Dietary fibers (composition, properties), Minerals and trace elements - Calcium, Iron, Iodine, Zinc and Copper (biochemical and physiological role, bioavailability and requirement), Vitamins (examples, biochemical and physiological requirements, deficiency and excess), Water (requirement, water balance), basic idea about community nutrition (objective and importance of various programmes).

Module - 3

(6 lectures/hrs.)

Food preservation: definition, objectives and principles of food preservation. Different methods of food preservation. Preserved Products: Jam, Jelly, Marmalade, Sauces, Pickles, Squashes, Syrups - types, composition and manufacture, selection, cost, storage, uses and nutritional aspects.

Module- 4

(4

lectures/hrs.) Contamination of Food and Food Safety:

Contamination of food- physical and chemical contaminants (Heavy metals and Pesticides). Intentional and unintentional additives, Food additives- Antimicrobial agents, antioxidant, sweeteners and colors.

Food laws and standards, Food safety, Food Hazards of biological origin.

Food Standards: ISI, Agmark, FPO, MPO, PFA, FSSAI.

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Module – 5 (Practical)

(8 hrs.)

Practical based on following heads:

- Food preservation by drying/dehydrating/freezing/pasteurization
- Processing of jams/jellies/sauces/pickles
- Quantitative estimation of carbohydrates/proteins/lipids/trace elements/vitamins in foods
- Food contamination test

Reference/suggested books

1. SrilakshmiB(2017): Nutrition Science,6th Multicolour Ed. New Age International (P)Ltd.
2. RodayS(2012): Food Science and Nutrition, 2nd Ed. Oxford UniversityPress.
3. Mann J and TruswellS(2017): Essentials of Human Nutrition, 5th Ed. Oxford University Press.
4. Wilson K and Walker J(2000): Principles and Techniques of Practical Biochemistry, 5th Ed. Oxford UniversityPress.
5. Sadasivan S and ManikamK(2007): Biochemical Methods, 3rd Ed. New Age International (P) Ltd.
6. Oser B L(1965). Hawk's Physiological Chemistry, 14th Ed. McGraw-HillBook
7. GopalanC, Rama Sastri BV and Balasubramanian SC(2016): Nutritive value of Indian Foods, Indian Council of MedicalResearch.
8. Subalakshmi G and Udipi SA(2006):Food processing and preservation, 1st Ed. New Age International(P)Ltd.
9. SrilakshmiB(2018): Food Science, 7th Colour Ed. New Age International (P) Lt
10. Potter NN and Hotchkiss JH(1999): Food science,5th Ed.,Spinger.

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- Top right: *SA* (blue)
- Left side: *B. Jay* (blue)
- Bottom left: *M* (blue)
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- Far right: *Chop* (blue)
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GENERAL INFORMATION

1. Duration of Course: 30 hrs.
3. Eligibility:UG/PG regular students
4. Participants per Batch:30

TEACHING METHODOLOGY

Teaching Mode: Synchronous (Online live)/Asynchronous (Online videos/ PDFs)

Some of the following methods of delivery may be adopted:

- A) Lecture
- B) Pdf/ Video
- C) Demonstration Video/Experimental
- D) Group Discussion

ASSESSMENT & CERTIFICATE

Assessment:

The assessment will be done by the department.Both theory and practical examinations will be conducted online/offline using synchronous and asynchronous modes based on suitable LMS

Pass regulation:

Minimum passing marks for Practical: 60%

Minimum pass marks for Theory: 40%

Certificate:

Successful candidates will be issued certificate by the College

ASSESSMENT GUIDELINE:

Assessment will be based on the following:

1. Written exam – Objective/subjective
2. Experiment and Viva-voce
3. Project work and presentation
4. Sessional-Attendance and punctuality

The following marking pattern to be adopted while assessing:

S.No.	Parameters	Assessable outcome	Marks
1.	Writing/Comprehension skill	Remember and Understand	60
2.	Analytical/Applied skill	Apply and Analyse	30
3.	Project work/Presentation skill	Evaluate and Create	20
4.	Sessional- regularity and performance	Aptitude and Attitude	10
Total			100

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