

DEPARTMENT OF BIO-TECHNOLOGY
VALUE ADDED COURSE

Semester	Course Code	Course Title	Hours
III	21UBTVAC1	BIOCOSMETICS	30

Course Outcomes:

At the end of the course, students will be able to:

CO1. Gain the knowledge of fundamental aspects of Biocosmetics and their sources.

CO2. Understand the role of cosmetic excipients and building blocks in the formulation of Cosmetics

CO3. Understand the fundamentals of sun protection and the formulation of Sunscreens, antiperspirants and deodorants

CO4. Enable the students to get exposed to processes involved in the manufacturing of herbal cosmetics

CO5. Motivate the students in the field of biocosmetics research and entrepreneurship.

Unit: I **6 hrs**

Biocosmetics: History and scope of biocosmetics; Importance of plant and animal resources in biocosmetics; Global market of biocosmetics; Manufacture and import of biocosmetics; Labelling, packaging standardization of biocosmetics and Shelf testing.

Unit: II **6 hrs**

Skin cosmetics: Skin and hand creams; Facial skin care; Body lotions and bath time herbs; Sun screen products, skin tonics and anti-acne creams; pharmaceutical and Pharmacological evaluation procedures for various formulations like Creams, Lotions, Lipsticks, face packs.

Unit: III **6 hrs**

Hair cosmetics: Formulation of shampoos, surfactants and conditioners; Types of shampoos with emphasis on herbal shampoos; Hair colourants, fixers, sprays and gels; Botanicals in hair care.

Unit: IV **6 hrs**

Herbal cosmetics: Cleansing agents - apricot. Emollients - aloe, almond. Astringent – amla. Freshening agent - chandan, khus. Fruits & vegetables as hair & skin care – Preparation of cosmetic products.

Unit: V **6 hrs**

Perfumes and fragrances: Selection of fragrance; Raw material used in the preparation of fragrance; Fragrance and allergenicity, water soluble fragrances; Aromatherapy (Historical perspective, essential oils, aromatherapy for stress relief, weight loss and beauty aid).

Text Books:

1. NIIR Board of Technologist, Hand Book of herbal products Vol I & II by, National Institute of Industrial Research, 2012.
2. Trease and Evans, Pharmacognosy: William Charles Evans Revised with the assistance of Daphne Evans Ed. 16th Elsevier 2009.
3. Behl PN, Srivastava G. Herbs Useful in Dermatological Therapy. Ed. 2nd New Delhi, India: CBS Publishers. 2002.

Semester	Course Code	Course Title	Hours
V	21UBTVAC2	FOOD PRESERVATION	30

Course Outcomes:

At the end of the course, students will be able to:

- CO1. Understand the effects of food Analyze and explain complex phenomena of preservation principles
- CO2. Understand the mechanisms of spoilage and deterioration of foods specifically by microbes and the impact on food processing operations.
- CO3. Gain the knowledge of food preservation processes by physico-chemical and biological methods.
- CO4. Utter the information applied in food science to control, assure food quality and to understand government regulations.
- CO5. Motivate the students will develop the skills of food processing and entrepreneurship.

Unit-I **6 hrs**

Fundamental of food preservation: Concept and importance of food preservation – Techniques of food preservation – Pasteurization – Sterilization – Blanching - Canning. Types of food materials– packaging and marketing.

Unit-II **6 hrs**

Micro-organisms in Food: Introduction - types of microbes - Enumeration of spoilage organism - *Staphylococcus aureus*, yeast and molds, Condition for microbial growth - Food spoilage and their control. **Probiotics**

Unit-III **6 hrs**

Food Processing: Primary processing - Cleaning, Sorting, Grading, Cutting, Seeding, Bleaching, Chilling and freezing. Secondary processing – Slicing, Pulping, Paste, Frying, Freezing and Milling. Food packaging - Requirements, Types and General properties of packaging materials.

Unit-IV **6 hrs**

Preservation by Physico-Chemical and Biological Methods: Food drying- Low temperature - Freezing and thawing - changes in food during freezing storage. Chemical- Salting, Smoking and Sugaring. Biological- Fermentation. Preparation of preserved foods- Pickles, Jam and Concentrated fruit syrup

Unit-V **6 hrs**

Food Safety and Quality control: Objectives, importance and function of Quality control -Concept of food safety, strategy and standards - Types of food law in preservation - Nutritional labeling, ISI Certification, Role of AGMARK, FPO, BIS and PFA.

Text Books:

1. Frazier, W.C. and Westhoff, D.C, Food Microbiology, TMH Publication, New Delhi, 2004.
2. Ramaswamy, H. and Marcott, M, Food Processing- Principles and Applications, CRC Press, 2006.
3. The training manual for Food Safety Regulators. Vol.II- Food Safety regulations and food safety management. Food safety and Standards Authority of India. New Delhi, 2011.