V Semester Skill Enhancement Courses

Mathematics Stream:

Laplace Transforms / Chemistry of Cosmetics & Perfumes

Bio-Sciences Stream:

Mushroom Cultivation Technology / Chemistry of Cosmetics & Perfumes

Arts Stream:

Archives and Museums / Interview Skills and Ethics

Commerce Stream:

Practice of General Insurance / International Banking
Unit I: Laplace transforms

Definition of Integral Transform - Definition of Laplace transform - linearity property - Piecewise continuous functions - Existence of Laplace transform - Functions of exponential order and of class A - First and second shifting theorems of Laplace transform - Change of scale property - Laplace transform of derivatives - Initial value theorem – Final value theorem - Laplace transform of integrals - Multiplication by powers of $t$ - Division by $t$ – Evaluation of Integrals - Laplace transform of periodic functions and some special functions.

Unit-II: Inverse Laplace transforms

Definition of Inverse Laplace transform – Definition of Null function - Linearity property - First and second shifting theorems of inverse Laplace transform, Change of scale property – Inverse Laplace transform of derivatives - Inverse Laplace transform of Integrals – Multiplication by powers of $p$ - Division by powers of $p$ – Definition of Convolution – convolution theorem - Heaviside’s expansion theorem or formula and applications – The Beta function.

Prescribed text Book: Scope as in Integral transforms by A.R. Vasishtha & Dr. R.K. Gupta Published by Krishna Prakashan Media Pvt. Ltd. Meerut. Chapter I, Chapter II: All sections except 2.3 and 2.18

Reference Book: Operational Mathematics by R.V.Churchil, McGraw Hill Company
Chemistry of Cosmetics & Perfumes

2 Credits

Unit I: Basic Information about Cosmetics & Perfumes

Historical background of Cosmetics, Definition and Classification of Cosmetics & Perfumes and their interdisciplinary nature. Introduction to skin and skin creams, Astringents and Skin Tonics, Antiperspirants, Deodorants, Sun screen and Suntan, Face packs and Masks, Face powder and make-ups. Introduction to Nail and Nail products; Hair and Hair products. The use of water in cosmetic industry. Cleanliness, Hygiene and Microbiological control in Manufacture, A brief history of Perfume.

Unit II: Formulation and Evaluation of Cosmetics & Perfumes

Ingredients of Cosmetics, Herbals use of Cosmetics, Formulation of Cosmetics for skin- Skin cream, Lotion, Face powder & Compacts, Skin colorants, Body powder, Face pack & Masks, Bath Preparations (bath salt, oil, powder, foam), Astringents & Skin tonics (antiperspirants, astringent lotion, pre-shave & after shave lotion, colognes), Formulation of Cosmetics for Nails, Nail polishes, Nail lacquers & removers, Nail bleaches & Stain removers, Cuticle remover & softener, Fingernail elongations, Formulation of Cosmetics for eye- Eye shadow, Mascara, Eyebrow pencil, Eye cream, Eye liners, Kajal, Quality Control of Cosmetics, A brief details of different vegetable and animal substances used in Perfumary.

Reference Books:
- G.W.Akinson, Perfumes and their Preparation, N.W.Hinley & Co., New York, USA.
- P.P. Sharma, Cosmetics formulation manufacturing & Quality control, Vandana Pub, Delhi.

Suggested Applications:
- Preparation of Shampoo.
- Preparation of Nail polish.
Mushroom Cultivation Technology

2 Credits

Unit-I

1. Introduction, importance and history of mushroom cultivation in India.
2. Types of edible mushrooms available in India- Pleurotus citrinopileatus, Agaricus bisporus.
3. Nutritional and medicinal value of edible mushrooms

Unit-II

1. Steps in mushroom cultivation, selection of site and types of mushroom, farm structure, design layout principle and techniques of compost and composting.
2. Preparation of spawn casing and crop production, harvesting and marketing.
3. Types of food prepared from mushrooms. Research centres- National level and Regional level.

Suggested Readings:

Archives and Museums

2 Credits


Recommended Books:

Interview Skills and Ethics

**Unit I**: Introduction: What is an interview, Types of interviews (Traditional, Screening, Behavioural and Group) and Basic norms of interview, Rules of Interview: Writing an effective Resume, Giving correct and accepted way of self introduction, Knowing the Organization, Self, and Job, Preparation and Interview Etiquette: Physical and Psychological preparation, Grooming your self, staying healthy, Dressing, Body language, Do’s and Don’t’s etc. Practice Questions, Mock interviews, Tips and Tricks for the interview.

**Unit II**: Definition of Ethics, How to live/lead a good life, Our rights and responsibilities, The language of right and wrong, Moral decisions – What is good and bad, Civic sense, Ethics in communication, Code of ethics.
