

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

Laplace Transforms

2 Credits

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 Perfumery.

Reference Books:

- Harry's *Cosmeticology*, Seventh Edition, Chemiccal Publishing, New York, USA.
- 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:

- a. Preparation of Shampoo.
- b. 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:

Tewari, Pankal Kapoor, S.C., (1988). Mushroom cultivation, Mittal Publications, Delhi

Archives and Museums

2 Credits

Unit-I: Definition of Archives – Scope – Types of Archives – Development of Archives – National and State Archives in India - Archives – Understanding the Traditions of Preservation – Collection - Purchase –Documentation: Accessioning – Indexing – Cataloguing – Digital Documentation and De-accessioning - Chemical Preservation and Restoration.

Unit-II: Definition of Museum - Introduction – Scope - Types of Museums - Significance of Museums - Museums in India - Museums – Collection – Field Exploration – Excavation – Purchase – Gift and Exchanges – Treasure Trove – Documentation - Indexing – Museum Presentation and Exhibition – Outreach Activities of Museums and Archives.

Recommended Books:

1. Saloni Mathur, *India by Design: Colonial History and Cultural Display*, University of California, 2007.
2. Sengupta, S., *Experiencing History through Archives*, Munshiram Manoharlal, Delhi, 2004.
3. Guha Thakurta, Tapati, *Monuments, Objects, Histories: Institution of Art in Colonial and Post-Colonial India*, New York, 2004.
4. Kathpalia, Y.P., *Conservation and Restoration of Archive Materials*, UNESCO, 1973.
5. Choudhary, R.D., *Museums of India and Their Maladies*, Agam Kala, Calcutta, 1988.
6. Nair, S.M., *Bio-Deterioration of Museum Materials*, Agam Kala Prakashan, 2011.
7. Agrawal, O.P., *Essentials of Conservation and Museology*, Sundeep Prakashan, New Delhi, 2007.

Interview Skills and Ethics

2 Credits

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 the 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.

Reference: Adams, Sally. *Interviewing for Journalists*. New York: Routledge, 2001.

8. Anderson, Rob and Killenberg, George M. *Interviewing: Speaking, Listening and Learning for Professional Life*. Mountain View, CA: Mayfield Publishing, 1999.
9. Biagi, Shirley. *Interviews that Work: A Practical Guide for Journalists*. Belmont, CA: Wadsworth, 1992.
10. Brady, John Joseph. *The Interviewer's Handbook: A Guerrilla Guide: Techniques & Tactics for Reporters & Writers*. Waukesha, WI: Writer Books, 2004.
11. Brauer, C. (2013). Just Sustainability? Sustainability and Social Justice in Professional Codes of Ethics for Engineers. *Science & Engineering Ethics*, 19(3), 875-891. doi: 10.1007/s11948-012-9421-4
12. Clements, Curtis, John D. Neill, and Scott O. Stovall. "The Impact of Cultural Differences on the Convergence of International Accounting Codes of Ethics." *Journal of Business Ethics* 90: Supplement 3 (2009) 383-391.
13. Davis, Michael. "Do Cops Really Need Code of Ethics?", *Criminal Justice Ethics*. 10 (1991): 14-28.
14. ---. *Profession, Code, and Ethics*. Burlington, VT: Ashgate, 2002.
15. ---. "[Thinking like an engineer: The Place of a Code of Ethics in the Practice of a Profession](#)", *Philosophy and Public Affairs* 20.2 (1991): 150-167.
16. ---. *Thinking Like an Engineer: Studies in the Ethics of a Profession*. New York: Oxford University Press, 1998. CSEP.TA157.D321998
17. ---. "Three Myths about Codes of Engineering Ethics." *IEEE Technology and Society Magazine*, Vol. 20, Issue 3. (Fall 2001) pp. 8-16.
18. ---. "What Can We Learn by Looking for the First Code of Professional Ethics?" *Theoretical Medicine* 24.5 (2003): 433-454.
19. Davis, Michael and Andrew Stark. *Conflict of Interest in the Professions*. Vol. VI The Oxford Series. Oxford University Press, 2001.