

Practical:

1. Kjonaas, R.A.; Williams, P.E.; Counce, D.A.; Crawley, L.R. **Synthesis of Ibuprofen**. J. Chem. Educ., 2011, 88 (6), pp 825–828 DOI: 10.1021/ed100892p.
2. Marsh, D.G.; Jacobs, D.L.; Veening, H. **Analysis of commercial vitamin C tablets by iodometric and coulometric titrimetry**. J. Chem. Educ., 1973, 50 (9), p 626. DOI: 10.1021/ed050p626

Teaching Learning Process:

The teaching learning process will involve the traditional chalk and black board method. Certain topics like retro-synthetic approach and fermentation processes are taught through audio-visual aids. Students are encouraged to participate actively in the classroom through regular presentations on curriculum based topics.

Assessment Methods:

Assessment will be done on the basis of regular class test, presentations and assignments as a part of internal assessment during the course as per the curriculum. End semester university examination will be held for both theory and practical. In practical, assessment will be done based on continuous evaluation, performance in the experiment on the date of examination and viva voce.

Keywords:

Retro-synthesis, Drug discovery, Design and synthesis, Side effects, Fermentation.

Course Code: CHEMISTRY –SEC-10

Course Title: Chemistry of Cosmetics and Perfumes

Total Credits: 04

(Credits: Theory-02, Practical-02)

(Total Lectures: Theory- 30, Practical-60)

Objectives:

Cosmetic plays an important role in our everyday lives as they make an individual's appearance more attractive and boost one's self-esteem and confidence. Keeping in view the tremendous potential which the cosmetic industry has today around the globe, this course will be useful for introducing students of Chemistry honours to the world of cosmetic chemistry. This has been designed to impart the theoretical and practical knowledge on basic principles of cosmetic chemistry, manufacture, formulation of various cosmetic products.

Learning outcomes:

By the end of this course, the students will be able to:

- Learn basic of cosmetics, various cosmetic formulation, ingredients and their roles in cosmetic products.
- Learn the use of safe, economic and body-friendly cosmetics
- Prepare new innovative formulations.

Unit 1:

Cosmetics- Definition, History, Classification, Ingredients, Nomenclature, Regulations.

(Lectures: 4)

Unit 2:

Face Preparation: Structure of skin, Face powder, Compact powder, Talcum powder.

(Lectures: 6)

Unit 3:

Skin Preparation: Face cream, vanishing cream, cold cream, suntan cream, lather shaving cream

(Lectures: 5)

Unit 4:

Hair preparation: Structure of hair, classification of hair, Hair dye- classification – temporary, semi-permanent, demi permanent, permanent, formulation, hair sprays, shampoo- types of shampoo, conditioners

(Lectures: 6)

Unit 5:

Colored preparation: Nail preparation Structure of nail, Nail lacquers, Nail polish remover Lipsticks

(Lectures: 4)

Unit 6:

Personal hygiene products: Antiperspirants and deodorants, oral hygiene products, flavours and essential oils

(Lectures: 5)

Practical:

(Credits: 02, Laboratory periods: 60)

Preparation of:

1. Talcum powder.
2. Shampoo.

3. Enamels.
4. Face cream.
5. Nail polish and nail polish remover.
6. Hand wash
7. Hand sanitizer
8. Body lotion
9. Soap
10. Tooth powder
11. Tooth paste

References:

1. Barel, A.O.; Paye, M.; Maibach, H.I.(2014),**Handbook of Cosmetic Science and Technology**, CRC Press.
2. Garud, A.; Sharma, P.K.; Garud, N. (2012),**Text Book of Cosmetics**, Pragati Prakashan.
3. Gupta, P.K.; Gupta, S.K.(2011),**Pharmaceutics and Cosmetics**, Pragati Prakashan
4. Butler, H. (2000),**Poucher's Perfumes, Cosmetic and Soap**, Springer
5. Kumari, R.(2018),**Chemistry of Cosmetics**, Prestige Publisher.

Additional Resources:

1. Flick,E.W.(1990),**Cosmetic and toiletry formulations**, Noyes Publications / William Andrew Publishing.
2. Natural Ingredients for Cosmetics; EU Survey 2005
3. Formulation Guide for cosmetics; The Nisshin OilliO Group, Ltd.
4. Functional Ingredients & Formulated Products for Cosmetics & Pharmaceuticals; NOF Corporation

Teaching Learning Process:

- Conventional chalk and board teaching with power point presentation, you tube videos. and presentations from students on relevant topics.
- Theory coupled with preparation of cosmetic products in lab.

Assessment Methods:

Internal assessment through assignments and class test. End semester written and practical examination.

Keywords:

Cosmetic Products, Ingredients, Formulations, Raw materials, Lab. preparation, Ideal characteristics