Structure and Detailed Syllabus of the Four Year Undergraduate Programme (FYUGP) of **SKILL ENHANCEMENT COURSE (SEC)** under NEP-2020

Department of Chemistry
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Paper Title : **BASIC SKILLS IN CHEMISTRY**
Category : **PRACTICAL**
Paper Code : **CHMSK-011, CHMSK-021 & CHMSK- 031**
Course No : **SEC- 01**
Credits : **03**
No. of Classes : **45**
Total Theory Marks : **75 [End Semester: 50; In Semester: 25]**

Course objectives:

- To give brief insight on macronutrients in food and detection of their presence.
- To introduce students about food adulterant.
- To understand chemistry of cosmetics and drugs
- To understand the chemistry behind indigenous practices

Expected Learner Outcome: Students will gain an understanding of

- Macronutrients found in food and simple laboratory test to detect their presence.
- Common adulterants in food and their detection technique.
- Qualitative detection of iron
- Chemistry of some basic drugs like analgesic, antipyretics etc.

Practical

(i) Introduction Chemistry laboratory (Hazard associate with exposure to chemicals, proper handling of chemicals)
(ii) A study to compare the quantity of caesin present in different samples of milk.
(iii) Preparation of soybean milk and its comparison with natural milk.
(iv) Detection of carbohydrate (reducing and non-reducing sugar) in a given sample.
(v) Detection of proteins and fats in given food sample.
(vi) Detection of various adulterants in different food products (milk, turmeric powder, sugar, red chilli powder, butter, black pepper)
(vii) Qualitative detection of iron in water sample.
(viii) Preparation of soap.
(ix) Preparation of Shampoo.
(x) Preparation of analgesic and antipyretics (aspirin & paracetamol)
(xi) Measurement of pH of different fruit juices (natural and commercial)
(xii) Chemistry of indigenous practices (traditional insect repellent, kolakhara, natural food pigments, preservatives, flavours etc.)

Recommended Books:

1. Patrick, G. L. *Introduction to Medicinal Chemistry, Oxford University* Press, UK, 2013.
2. Singh, H. & Kapoor, V.K. *Medicinal and Pharmaceutical Chemistry,* Vallabh Prakashan, Pitampura, New Delhi, 2012
3. Foye, W.O., Lemke, T.L. & William, D.A.: *Principles of Medicinal Chemistry*, 4th ed., B.I. Waverly Pvt. Ltd. New Delhi.
4. Stocchi, E. *Industrial Chemistry*, Vol-I, Ellis Horwood Ltd. UK (1990).
5. Jain, P.C. & Jain, M. *Engineering Chemistry* Dhanpat Rai & Sons, Delhi. HWEVA