

# UNDERGRADUATE SYLLABUS OF CHEMISTRY

Under FYUGP (NEP-2020)

**[SKILL ENHANCEMENT COURSE]**



**Department of Chemistry**  
Jagannath Barooah College  
(An Autonomous College Affiliated to Dibrugarh University)  
Barpatra Ali, Jorhat-785001 (Assam)

## SEMESTER I/ II/ III

<b>PAPER TITLE</b>	<b>: BASIC SKILLS IN CHEMISTRY (PRACTICAL)</b>
<b>Paper Code</b>	<b>: CHMSK-011 &amp; CHMSK-021 &amp; CHMSK-031</b>
<b>Course No</b>	<b>: S- 01/02/03</b>
<b>Credits</b>	<b>: 03</b>
<b>No. of Classes</b>	<b>: 90</b>
<b>Total Practical Marks</b>	<b>: 75 [End Semester: 50; In Semester: 25]</b>

### **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*, 4<sup>th</sup> 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.
6. Sharma, B.K. & Gaur, H. *Industrial Chemistry*, Goel Publishing House, Meerut, (1996).