

**Subject Code:1SC1030602**

**Subject Title: Organic Chemistry-II**

**Course Objective:**

Generally knowledge with the following areas in chemistry: analytical, inorganic, organic, physical and biochemistry. The faculty to job effectively and securely in a laboratory environment. Opportunities for student and faculty to interact with alumni and with professional chemists. The fundamental analytical and industrial skills to work and industrial skills to work effectively in the different fields of chemistry. The capacity to produce, divide and characterize compounds using published reactions, protocols, normal laboratory equipment, and current instrumentation.

Teaching scheme (hours) per week		Credit		Theory Marks		Practical Marks		Total
Theory	Practical	Theory	Practical	University Assessment	Cont. Assessment	University Assessment	Cont. Assessment	
3	-	3	-	70	30	-	-	100

Sr. No	Topic	Lectures	Weightage
1	<b>Electrophillic and free radical addition reaction</b> <ul style="list-style-type: none"> <li>❖ Addition to carbon carbon double bond</li> <li>❖ Markovnikov's rule</li> <li>❖ Electrophillic addition, Orientation,</li> <li>❖ Reactivity, Rearrangement, Dimerization, Alkylation</li> <li>❖ Peroxide effect (Antimarkovnikov's rule)</li> <li>❖ Free radical addition, mechanism of peroxideinitiated addition of HBr</li> <li>❖ Synandanti addition mechanism for addition of halogens</li> <li>❖ Electrophillic addition to conjugated dienes(1:2 v/s1:4addition)</li> <li>❖ Freer radical addition to conjugated dienes, reactivity</li> </ul>	18	35%
2	<b>Active Methylene Group Compounds</b> <ul style="list-style-type: none"> <li>❖ Introduction of Tautomerism</li> <li>❖ Determination of keto-enoltautomerism</li> <li>❖ Differences between Tautomerism and resonance</li> <li>❖ Synthesis and application of Ethylacetoacetate and malonic ester</li> </ul>	18	35%
3	<b>Nucleophillic Aromatic Substitutions</b> <ul style="list-style-type: none"> <li>❖ Nucleophilic aromatic substitution [Bimolecular displacement(SN<sup>2</sup>) mechanism]</li> <li>❖ Elimination-Addition mechanism via benzyne</li> <li>❖ Stability and properties of benzyne</li> <li>❖ Evidences of Benzyne intermediate</li> </ul>	12	30%

**Course Outcome:**

- ❖ Have solid foundations in the fundamentals and purpose of current chemical and scientific theories.
- ❖ Are capable to design, carry out, record and analyze the results of chemical experiments.

- ❖ Are capable to use current instrumentation and classical techniques, to design experiments, and to properly record the results of their experiment.
- ❖ Are skillful in problems solving, significant thinking and analytical reasoning.
- ❖ Are capable to identify and solve chemical problems and explore new areas of research.
- ❖ Are capable to use up to date library searching and retrieval methods to obtain information about a topic, chemical, chemical technique, or an issue relating to chemistry.

**List of References:**

**Organic Chemistry**

1. Organic Chemistry by Morrison and Boyd. 4th ed. Pearson Education- 2003
2. Organic Chemistry by Pine, Hendrickson, Cram and Hammond 4th ed. By P.S.Kalsi.
3. Advance Organic Chemistry by Jerry March.
4. Advance Organic Chemistry by ArunBahal and B.S.Bahal.
5. Organic Chemistry Vol. I & II by S.M.Mukherji, S.P.Sing, R.P.Kapoor.
6. Reaction mechanism and Reagents in Organic Chemistry by GurdeepR.Chatwal 4th ed. Himalaya public House.
7. Text book of Organic Chemistry by ArunBahal, B.S.Bhal, S.Chand.
8. Organic Spectroscopy by P.S.Kalsi.
9. Organic Chemistry by I.R.Finar.

**e-Resource:**

1. <http://onlinelibrary.wiley.com/>
2. [https://en.wikipedia.org/wiki/Main\\_Page](https://en.wikipedia.org/wiki/Main_Page)



**Sankalchand Patel University**  
Faculty of Science  
**B.Sc. Chemistry (SEM-VI)**  
In Effect from Academic Year 2018-19